# Appendix E
# Noise

This appendix provides back-up data for the noise analysis results summarized in Draft EIS Section 3.7.1 Noise. Following are the topics addressed in this appendix:

- CREATE Noise and Vibration Assessment Methodology
- Screening and Noise Monitoring
    - Background Sound Level Monitoring and Calculations
    - Screening Distances
- Prediction of Existing, No-Build, and Build Sound Levels
- Evaluation of Noise Abatement Measures
- Construction Noise Analysis for Temporary Track Locations
- $L_{max}$ Analysis and Results

The following detailed tables and figures are included at the end of this appendix:

- Table E-1 – Screening Distance Evaluation
- Table E-2 – General Noise Assessment – Exterior Sound Levels
- Table E-3 – General Noise Assessment – Interior Sound Levels
- Table E-4 – Detailed Noise Assessment – Exterior Sound Levels
- Table E-5 – Detailed Noise Assessment – Interior Sound Levels
- Table E-6 – Abatement Evaluation – Exterior Impacts
- Table E-7 – Abatement Evaluation – Interior Impacts
- Table E-8 – Abatement Evaluation – Exterior and Interior Impact Combination
- Table E-9 – Construction Noise – General Assessment – Exterior Sound Levels
- Table E-10 – Construction Noise – General Assessment – Interior Sound Levels
- Table E-11 – Construction Noise – Detailed Assessment – Exterior Sound Levels
- Table E-12 – Construction Abatement Evaluation – Exterior Impacts
- Table E-13 – $L_{max}$ Sound Levels
- Figures 1 to 12 – NEA Receptor and Cluster Maps
- Figures 13 – 23 – Abatement Evaluation Maps

## 1.1 CREATE Noise and Vibration Assessment Methodology

The CREATE Program has established the methodology for the analysis of noise and vibration for the proposed projects within CREATE program since there are no existing federal guidance documents or methods specifically applicable to the evaluation of freight train traffic noise. The *CREATE Noise and Vibration Assessment Methodology*, June 2013 (CREATE methodology), is based upon the FTA's *Transit Noise and Vibration Impact Assessment*, May 2006, with certain modifications to allow for the evaluation of freight traffic.

The first step was to identify if any noise-sensitive receptors were within the noise screening distance. If receptors were identified then the evaluation continued with a General Noise Assessment to determine if any of the receptors would be impacted by the project. If receptors were impacted, a detailed analysis was performed

on those receptors, adding additional factors such as the effect of ground attenuation and elevation differences between receptor and noise source. For any remaining impacts, noise mitigation was analyzed, such as noise barriers.

Additionally, to further describe the noise characteristics of the project, the CREATE methodology required that the $L_{max}$ be calculated for each receptor impacted under the general assessment, and the highest $L_{max}$ to be reported.

## 1.2 Screening

Screening distances were developed to identify the potential limits of noise impact from freight and passenger activity. The screening distance was based upon background sound levels, population density, and projected freight traffic in the Build condition. This information varied within the project area, so the project area was subdivided into 19 noise evaluation areas (NEAs) assumed to have similar train activity and background noise conditions.

### 1.2.1 Background Sound Level Monitoring and Calculations

To determine existing background existing sound levels, representative receptors were chosen for noise monitoring within each NEA. Noise monitoring was performed October 18 through October 22, 2010, between 8:00 a m. and 5:00 p.m. A Bruel & Kjaer 2236, Type I noise monitor was used for data collection. The device was equipped with a windscreen to eliminate noise associated with wind blowing across the microphone. The monitor was calibrated with an acoustical calibrator before and after each measurement. Weather conditions were also considered to ensure accurate readings.

Noise monitoring was performed according to the recommended approach in the *CREATE Noise and Vibration Assessment Methodology* for use when train traffic information is to be provided by the Chicago Transportation Coordination Office (CTCO) for the existing scenario. Noise levels were monitored at each location in one-minute increments for approximately one hour. The time interval for each CREATE program train pass-by was recorded, and the time of monitoring was extended by this amount. The train pass-by events were removed from the data set, so at the end of the monitoring period 60 one-minute intervals were recorded that did not have train pass-bys. These 60 one-minute intervals were then used to calculate the hourly $L_{eq}$, which was then used as the background sound level for Land Use Category 3 sites (institutional land uses). For Land Use Category 2 sites (residential land uses), the FTA conversion method was used to convert $L_{eq}$ to $L_{dn}$, which for measurements taken between 7:00 a m. and 7:00 p.m., was to subtract 2 dBA from the $L_{eq}$. The resulting background sound levels are included in Table E-1 at the end of this appendix, and were used to determine the screening distances, as described below.

### 1.2.2 Screening Distances

Tables 4-1 to 4-4 from the *CREATE Methodology* were used to identify the unobstructed and obstructed screening distances for each NEA. The obstructed distance applies if building rows are present between the railroad and the edge of the screening distance, such as an industrial area or dense residential area. The unobstructed distance applies if no building rows are present such as would occur with the first row of residences, or residences behind a large park or cemetery.

Table 4-3 from the *CREATE Methodology* (refer to Exhibit E-1) was used to determine the type of train activity category (low, medium, or high) associated with NEA. This was based upon the Build freight train activity

obtained from CTCO for each NEA. Areas exposed to whistle blowing noise at grade crossings were assigned the high freight activity screening distance regardless of train activity characteristics.

Table 4-4 from the *CREATE Methodology* (refer to Exhibit E-2) was used to determine the ambient noise category (normal suburban residential, urban residential, or noisy urban residential). As the ambient noise category is based upon two factors, population density and background sound levels, each NEA was assigned an ambient noise category based upon each criterion. Lower noise ambient categories would lead to larger screening distances and a more conservative noise analysis in terms of spatial coverage; therefore, the lower ambient category was identified for each NEA.

### Exhibit E-1: Low, Medium and High Freight Train Activity Categories and Characteristics

**TABLE 4-3***
**Low, Medium and High Freight Train Activity Characteristics**

| Train Activity | Trains per Day | Speed (mph) | Length of Cars (feet) | Locomotives /train |
|---|---|---|---|---|
| Low | 5 to 40 | 10 to 20 | 1,000 to 4,000 | 1 to 2.08 |
| Medium | 41 to 75 | 20 to 30 | 4,000 to 6,000 | 2.08 to 2.5 |
| High | More than 75 | More than 30 | More than 6,000 | More than 2.5 |

*Source for Tables 4-1, 4-2, and 4-3: *Screening Distances for Potential Noise Impact by Ambient Location and Train Activity for CREATE Projects,* Appendix A.

Source: *CREATE Noise and Vibration Assessment Methodology*, June, 2013, Table 4-3.

### Exhibit E-2: Ambient Noise Level Categories

**TABLE 4-4***
**Ambient Noise Level Categories**

| Ambient Category | Range of $L_{dn}$ (dB(A)) | Average $L_{dn}$ (dB(A)) | Average Census Tract Population Density per Square Mile |
|---|---|---|---|
| Normal Suburban Residential | 53 to 57 | 55 | 2,000 |
| Urban Residential | 58 to 62 | 60 | 6,300 |
| Noisy Urban Residential | 63 to 67 | 65 | 20,000 |

*Source for Tables 4-1, 4-2 and 4-3: *Screening Distances for Potential Noise Impact by Ambient Location and Train Activity for CREATE Projects,* Appendix A.

Source: *CREATE Noise and Vibration Assessment Methodology*, June, 2013, Table 4-4.

Tables 4-1 and 4-2 from the *CREATE Methodology* (refer to Exhibits E-3 and E-4) then used the Train Activity Category combined with the Ambient Noise Category to determine the Unobstructed and Obstructed Screening Distances that was used for each NEA. Table E-1 at the end of this appendix details the results of this analysis.

## Exhibit E-3: Screening Distances for Unobstructed Sight Lines

**TABLE 4-1[4]**
**Screening Distances for Unobstructed Sight Lines for Low, Medium and High Train Activity vs. Noise Receptor Location**

| Ambient Category | Screening Distance (ft from centerline of track) | | | |
|---|---|---|---|---|
| | Train Volume | | | |
| | Low (Freight Only) | Low Mix (Freight and Passenger[3]) | Medium (Freight[1]) | High (Freight[1,2]) |
| Normal Suburban Residential | 400 | 450 | 1,000 | 1,500 |
| Urban Residential | 300 | 350 | 750 | 1,200 |
| Noisy Urban Residential | 150 | 200 | 450 | 750 |

[1] Addition of commuter/passenger train traffic does not change screening distances.
[2] Use this category for grade crossings where horns are sounded.
[3] Appropriate category when commuter/passenger/commuter present with low freight activity.
[4] Table 4-1 derived from Table 4-2.

Source: *CREATE Noise and Vibration Assessment Methodology*, June, 2013, Table 4-1.

## Exhibit E-4: Screening Distances for Obstructed Sight Lines

**TABLE 4-2***
**Screening Distances with Intervening Obstructions** for Low, Medium and High Train Activity vs. Noise Receptor Location**

| Ambient Category | Screening Distance (ft from centerline of track) | | | |
|---|---|---|---|---|
| | Train Volume | | | |
| | Low (Freight Only) | Low Mix (Freight and Passenger[3]) | Medium (Freight[1]) | High (Freight[1,2]) |
| Normal Suburban Residential | 200 | 225 | 500 | 1,000 |
| Urban Residential | 150 | 175 | 375 | 750 |
| Noisy Urban Residential | 75 | 100 | 225 | 500 |

[1] Addition of commuter/passenger train traffic does not change screening distances.
[2] Use this category for grade crossings where horns are sounded.
[3] Appropriate category when commuter/passenger/commuter present with low freight activity.
*Source for Tables 4-1, 4-2, and 4-3: *Screening Distances for Potential Noise Impact by Ambient Location and Train Activity for CREATE Projects* (see Appendix A).
**Obstructions can include intervening buildings, terrain, embankments, and structures such as overpasses and retaining walls that block the line of sight between the noise source (i.e. trains) and sensitive receptors.

Source: *CREATE Noise and Vibration Assessment Methodology*, June, 2013, Table 4-2.

Project mapping, aerial photography, and field reviews were used to identify noise sensitive land uses along the project corridor within the identified screening distances. As there were numerous noise sensitive land uses within the screening distances, a General Noise Assessment was required.

## 1.3 Prediction of Existing, No-Build, and Build Sound Levels

### 1.3.1 General Exterior Noise Assessment

The 19 NEAs were further divided into clusters to account for differences in noise exposure resulting from incremental distances from the corridor centerline within the screening area. A single receptor within each cluster was then used for analysis purposes. Each receptor represents the "worst case" condition allowing for a conservative estimate for the entire cluster. For residences, the frequent exterior use was typically six feet from the edge of the building facing the noise sources, unless there was an identifiable frequent exterior use, such as a patio, near the back property line. For parks, the frequent exterior uses typically included identified paths, picnic tables, shelters, and ball fields. For schools, playgrounds or fields were the frequent exterior use, if there was one. Figures 1 through 12 at the end of this Appendix show the locations of each receptor analyzed and the cluster and NEA that it represents.

Project details including number of trains during the day and night periods, number of cars and locomotives per train, and train speed were estimated by the CTCO for each track in the project study area and for each condition – Existing, No-Build, and Build. This information was then averaged for each track and input into the CREATE spreadsheet model to estimate train-related noise at each receptor cluster. The train sound levels were then added to the background levels. The resultant sound levels for Existing, No-Build, and Build are detailed in Table E-2 at the end of this Appendix. To identify impacts, the difference between the Existing condition and the Build Alternative condition was identified and compared to the FTA impact table. Of the 442 receptors analyzed for exterior impacts, 118 were impacted in the Build Alternative under the General Assessment. For comparison purposes, the difference between the Existing condition and the No-Build Alternative was identified and compared to the FTA impact table. Under the No-Build Alternative 55 receptors were above the FTA impact threshold.

### 1.3.2 General Interior Noise Assessment

Where there are no exterior activities to be affected by the project noise at institutional land uses, such as at churches, libraries, and some schools (e.g., a school with no outdoor common areas), or where the exterior activities are far from or physically shielded from the project in a manner that prevents an impact on exterior activities, FHWA's interior criterion was used as the basis of determining noise impacts. To compute interior sound levels, the exterior project sound levels were estimated as described above. A building noise reduction factor was then applied which subtracts from the project-related sound level to account for the shielding of the building. The factor ranges from 10 dBA for a typical structure that has windows that open, to 35 dBA for a masonry structure with double glazed windows (refer to Exhibit E-5). Unless it was confirmed that the windows were kept closed almost every day of the year, the windows were considered open, so the 10 dBA factor was used. The FHWA criteria states that an impact occurs if the interior project-related sound level is either 51 dBA or greater or would be 14 dBA greater than existing project-related sound levels.

Within the study area, twenty-six churches, a library and four schools have been identified as having no exterior activities. Eight of these receptors are equal to or above the 51 dBA threshold in the existing conditions and the No-Build Alternative: five religious facilities (God's Way Apostolic Faith Church, Freedom

Temple Church of God, Beacon Light Baptist Church, Trinity United Church of Christ, and St. Thaddeus Catholic Church) and three schools (the Ashburn Community Elementary School, the Parker Elementary Community Academy, and the Banner School). These same eight receptors are above the impact threshold in the Build Alternative under the General Assessment (refer to Table E-3 at the end of this Appendix).

**Exhibit E-5: Building Noise Reduction Factors due to Building Exteriors**

**TABLE 5-1**
**Building Noise Reduction Factors due to Building Exteriors**

| Building Type | Window Condition | Structure Reduction |
|---|---|---|
| All | Open | 10 dB |
| Light Frame | Ordinary Sash (closed) | 20 dB |
| | Storm Windows | 25 dB |
| Masonry | Single Glazed | 25 dB |
| | Double Glazed | 35 dB |

Note: The window shall be considered open unless there is firm knowledge that the windows are in fact kept closed almost every day of the year.
Source: USDOT FHWA, *Highway Traffic Noise: Analysis and AbatementGuidance*, June 2010, January 2011, as revised.

### 1.3.3 Detailed Noise Assessment

The General Assessment resulted in the identification of 118 receptors that were above the exterior impact threshold in the Build Alternative, and 55 receptors were above the threshold in the No-Build Alternative. An additional eight receptors were above the 51 dBA interior threshold in both the Build and No-Build Alternatives. A detailed noise assessment was then performed on these receptors to refine the analysis, including incorporating the effects of ground attenuation and elevation differences between the receptor and the noise source.

The results of the detailed analysis for exterior noise show that the Build Alternative would impact 91 receptors (refer to Table E-4 at the end of this Appendix). An additional 7 receptors would experience interior impacts (refer to Table E-5 at the end of this Appendix). The total number of impacted residences would be 1359, and the impacted institutional land uses would be 10 (4 churches, 3 schools, and 3 parks). As a comparison, under the No-Build Alternative, 39 receptors would be above the FTA impact threshold for exterior noise and 6 receptors would be above the FHWA threshold for interior noise, totaling 1072 residences and 8 institutional land uses.

## 1.4 Evaluation of Abatement Measures

According to the *CREATE Methodology*, noise abatement is required to be considered for areas that experience a moderate or severe impact. To be feasible, the mitigation would need to provide a reduction in Build Scenario CREATE Program Train Noise Level (Design Year) of at least 5 dBA (both interior and exterior) at the impacted receptor. Mitigation for exterior noise impacts must also be cost effective, not exceeding a cost of $5,000 per benefited receptor for each decibel meeting or exceeding the moderate impact threshold, up to a total limit of $30,000 per benefited impacted receptor. For severely impacted receptors, the cost per benefited receptor should not exceed $30,000. This can include receptors located above ground-floor elevation in multi-story buildings (e.g. second floor apartments). For interior impacts, noise mitigation measures must not exceed

a cost of $5,000 per benefited receptor for each decibel exceeding the Existing Scenario CREATE Program Train Noise Level, up to a total limit of $30,000 per benefited receptor.

Noise barriers are generally the most practical noise mitigation option given their overall effectiveness and their ability to be constructed on the railroad right-of-way in most instances. Other options include acquisition of property to serve as a buffer zone and noise insulation for non-residential locations. Given that the majority of the 75th Street CIP study area is built-out, buffer zones are generally not an option for mitigation. Additionally, FHWA has determined that noise insulation is not a reasonable mitigation measure for this project.

The cost associated with noise barriers was calculated based on a $25.00 per square foot cost for barriers up to and including 15 feet tall; $37.50 for walls up to and including 30 feet tall; and $50.00 for walls up to and including 45 feet tall. Where minor modifications (i.e., additional civil and/or structural work) would allow for a shorter noise wall, the barrier options were compared and the lower cost barrier was included in the analysis. The additional costs such as land acquisition and additional civil and structural work were included in the total barrier cost.

Each impacted area was studied to determine if a sufficiently long noise barrier could be constructed to protect the impact area, and if so, whether it would be cost effective. The effectiveness of a noise barrier in mitigating rail noise is largely dependent on sufficient height and physical continuity along its length to screen out a moving train along most of its visible path. Noise barriers should generally extend four times as far in each direction as the distance from the receiver to the barrier. As requested by the railroads, the following clearance distances were used to identify where potential barriers could be located; although the railroads have been flexible, noting the potential for clear distance variances at certain locations.

- Amtrak – 25 feet from centerline of outermost track
- BRC – property line and 25 feet from centerline of outermost track
- CN – property line
- CSX – property line and 25 feet from centerline of outermost track
- NS – property line and 26 feet from centerline of outermost track
- UP – property line and 25 feet from centerline of outermost track
- Metra – no minimum; however sight distances and clearance for emergency equipment must be maintained

Tables E-6, E-7, E-8 at the end of this appendix summarize the feasibility and cost effectiveness of constructing a barrier for each impacted area. Figures 13 through 21 at the end of this Appendix show the locations of the barriers that were studied. A total of 21 noise barriers were determined to be feasible. These barriers were analyzed to determine their effectiveness at mitigating impacts, as well as their cost-effectiveness. Four of these barriers were deemed to be reasonable and are likely to be recommended for construction.

The noise analysis for this project may need to be reassessed if: a) the project is revised in a manner in which impacts of the project may change due to the project revisions (e.g., a new track alignment is moved closer to a receptor), or b) the CREATE Program's train model is updated due to projects being removed or added to the CREATE Program. The final decision on implementing noise mitigation measures will be made upon the completion of the project design and public involvement process.

## 1.5 Construction Noise Analysis for Areas with Temporary Tracks

At Forest Hill Junction, a pair of temporary tracks is proposed during construction to allow the existing CSX mainline tracks to be removed and the CSX flyover structure to be constructed in their place. These temporary tracks would be located east of the current CSX alignment between 79th Street and Marquette Road, approximately 60 to 80 feet closer to sensitive residential receptors. The noise levels would be increased at these areas during the flyover construction period due to the operation of trains on these closer tracks. The temporary tracks are expected to be in use for about a year. No other areas within the study area would require similar temporary tracks to accommodate construction.

Potential noise increases during construction were assessed the same way as described above for the build year analysis, using the *CREATE Methodology*, starting with a general assessment, and then where necessary, a detailed assessment. This analysis took into account the reduced distance between each noise receptor within the screening distance of the temporary tracks. The results showed that moving the tracks closer to the residences would raise the sound levels at the residences in the vicinity of the 71st Street at-grade crossing due to the whistle noise and to the residences in the vicinity of the BRC/CSX crossover due to passby noise (refer to Tables E-9, and E-10, and E-11 at the end of this Appendix). Barriers were evaluated for these areas; however they would not be cost-effective (refer to Table E-12). Figures 22 and 23 at the end of this Appendix show the locations of the barriers that were studied.

## 1.6 $L_{max}$ Analysis and Results

$L_{max}$ is the descriptor used to summarize the A-weighted sound level for an individual train passby. Although $L_{max}$ is not used to determine impact, it is a useful descriptor to represent the highest sound level that receivers would hear during the time that the train passes by. The $L_{max}$ sound levels do not account for reductions that could occur with relative changes in ground factors or shielding.

The $L_{max}$ was computed for each receptor that required a detailed analysis, as per the *CREATE Methodology* (refer to Table E-13 after this Appendix). The $L_{max}$ would change at each receptor by -2 to +5 dBA between the Existing and Build condition. This increase was caused by increased speeds and moving the track closer to the receptors in some locations. In both the Existing and Build conditions, the highest $L_{max}$ value would be 109 dBA and was associated with the horn noise. This 109 dBA $L_{max}$ value would occur at receptors 1M7, 1M14, and 1N9. The largest increase of $L_{max}$ between the Existing and Build conditions occurred at receptor 10E, with an increase of railcar noise by 5 dBA from 91 dBA to 96 dBA.

**Table E-1 - Screening Distance Evaluation**

| NEA | Monitored Sound Level (Ldn) (1) | Ldn Category | Population Density per square mile | Population Density Category | Ambient Category (2) | Build Freight Trains/Day | Average Speed | Average Length | Average Locos | Freight Train Category (3) | Unobstructed Screening Distance (feet) | Obstructed Screening Distance (feet) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R1 | 62 | Urban Residential | 6,503 | Urban Residential | Urban Residential | 25 | 20 | 4,923 | 2.23 | Medium | 750 | 375 |
| R1/GC | 62 | Urban Residential | 6,503 | Urban Residential | Urban Residential | 25 | 20 | 4,923 | 2.23 | High | 1200 | 750 |
| R2/GC | 59 | Urban Residential | 14,966 | Urban Residential | Urban Residential | 101 | 22 | 6,796 | 2.54 | High | 1200 | 750 |
| R3 | 53 | Normal Suburban Residential | 12,538 | Urban Residential | Normal Suburban Residential | 93 | 23 | 7,084 | 2.61 | High | 1500 | 1000 |
| R4 | 50 | Normal Suburban Residential | 13,148 | Urban Residential | Normal Suburban Residential | 26 | 21 | 6,844 | 2.5 | High | 1500 | 1000 |
| R5 | 51 | Normal Suburban Residential | 14,186 | Urban Residential | Normal Suburban Residential | 33 | 18 | 5,910 | 2.47 | Medium | 1000 | 500 |
| R5/GC | 51 | Normal Suburban Residential | 14,186 | Urban Residential | Normal Suburban Residential | 33 | 18 | 5,910 | 2.47 | High | 1500 | 1000 |
| R6 | 59 | Urban Residential | 17,776 | Noisy Urban Residential | Urban Residential | 113 | 23 | 7,049 | 2.59 | High | 1200 | 750 |
| R7 | 51 | Normal Suburban Residential | 14,430 | Urban Residential | Normal Suburban Residential | 10 | 24 | 5,649 | 2.4 | Medium | 1000 | 500 |
| R8 | 57 | Normal Suburban Residential | 19,662 | Noisy Urban Residential | Normal Suburban Residential | 113 | 23 | 7,049 | 2.59 | High | 1500 | 1000 |
| R9 | 55 | Normal Suburban Residential | 15,780 | Noisy Urban Residential | Normal Suburban Residential | 113 | 23 | 7,049 | 2.59 | High | 1500 | 1000 |
| R10 | 66 | Noisy Urban Residential | 12,735 | Urban Residential | Urban Residential | 116 | 23 | 6,968 | 2.6 | High | 1200 | 750 |
| R11 | 55 | Normal Suburban Residential | 12,611 | Urban Residential | Normal Suburban Residential | 4 | 23 | 4,140 | 2.47 | Medium | 1000 | 500 |
| R12 | 55 | Normal Suburban Residential | 10,863 | Urban Residential | Normal Suburban Residential | 0 | NA | NA | NA | Low Mix | 450 | 225 |
| R13 | 55 | Normal Suburban Residential | 8,319 | Urban Residential | Normal Suburban Residential | 119 | 23 | 6,878 | 2.59 | High | 1500 | 1000 |
| R14 | 60 | Urban Residential | 12,089 | Urban Residential | Urban Residential | 122 | 23 | 6,740 | 2.6 | High | 1200 | 750 |
| R15 | 59 | Urban Residential | 6,021 | Urban Residential | Urban Residential | 122 | 25 | 6,740 | 2.6 | High | 1200 | 750 |
| R16 | 62 | Urban Residential | 9,192 | Urban Residential | Urban Residential | 122 | 25 | 6,740 | 2.6 | High | 1200 | 750 |
| R17 | 55 | Normal Suburban Residential | 4,370 | Normal Suburban Residential | Normal Suburban Residential | 122 | 25 | 6,740 | 2.6 | High | 1500 | 1000 |
| R18 | 57 | Normal Suburban Residential | 9,294 | Urban Residential | Normal Suburban Residential | 81 | 25 | 6,876 | 2.66 | High | 1500 | 1000 |
| R19 | 75 | Noisy Urban Residential | 11,023 | Urban Residential | Urban Residential | 40 | 34 | 6,467 | 2.48 | High | 1200 | 750 |
| R19/GC | 75 | Noisy Urban Residential | 11,023 | Urban Residential | Urban Residential | 40 | 34 | 6,467 | 2.48 | High | 1200 | 750 |

Notes: (1) Monitored sound level includes ambient levels and train passbys; (2) The lowest ambient category, Ldn category vs. population density category, was identified as the ambient category to be conservative (3) Medium increase to High for areas with grade crossings.

Source: U.S. Census, year 2000, Chicago Transportation Coordination Office, Train Model Output, 27 May 2011, Raw data.

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 1A2 | 2 / Ldn | 6 | Residential | 50 | 64 | 64 | 64 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1A3 | 2 / Ldn | 5 | Residential | 50 | 61 | 61 | 61 | 0 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 1A4 | 3 / Leq | - | School | 52 | 72 | 73 | 73 | 1 | Moderate: 3-6 dBA<br>Severe: >6 dBA | No Impact |
| 1B1 | 2 / Ldn | 13 | Residential | 50 | 67 | 68 | 68 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1B2 | 2 / Ldn | 10 | Residential | 50 | 63 | 63 | 63 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1B3 | 2 / Ldn | 13 | Residential | 50 | 60 | 60 | 60 | 0 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 1B4 | 2 / Ldn | 3 | Residential | 50 | 70 | 70 | 70 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1B5 | 2 / Ldn | 2 | Residential | 50 | 66 | 67 | 67 | 1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1B6 | 2 / Ldn | 5 | Residential | 50 | 64 | 64 | 64 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1B7 | 2 / Ldn | 6 | Residential | 50 | 62 | 62 | 63 | 1 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1C1 | 2 / Ldn | 15 | Residential | 50 | 82 | 83 | 82 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1C2 | 2 / Ldn | 30 | Residential | 50 | 70 | 70 | 70 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1C3 | 2 / Ldn | 30 | Residential | 50 | 65 | 65 | 65 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1C4 | 2 / Ldn | 59 | Residential | 50 | 63 | 63 | 63 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1C5 | 2 / Ldn | 29 | Residential | 50 | 85 | 85 | 85 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1C6 | 2 / Ldn | 22 | Residential | 50 | 71 | 71 | 71 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1C7 | 2 / Ldn | 18 | Residential | 50 | 67 | 67 | 67 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1C8 | 2 / Ldn | 28 | Residential | 50 | 64 | 64 | 64 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1C9 | 2 / Ldn | 27 | Residential | 50 | 61 | 61 | 61 | 0 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 1D1 | 2 / Ldn | 16 | Residential | 50 | 82 | 82 | 82 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1D2 | 2 / Ldn | 14 | Residential | 50 | 68 | 68 | 68 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1D3 | 2 / Ldn | 17 | Residential | 50 | 65 | 65 | 65 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1D4 | 2 / Ldn | 27 | Residential | 50 | 62 | 62 | 62 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1D5 | 2 / Ldn | 16 | Residential | 50 | 82 | 82 | 82 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1D6 | 2 / Ldn | 16 | Residential | 50 | 69 | 69 | 70 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 1D7 | 2 / Ldn | 12 | Residential | 50 | 66 | 66 | 66 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1D8 | 2 / Ldn | 11 | Residential | 50 | 63 | 63 | 63 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1D9 | 2 / Ldn | 21 | Residential | 50 | 60 | 60 | 60 | 0 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 1E1 | 2 / Ldn | 4 | Residential | 50 | 81 | 81 | 81 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1E2 | 2 / Ldn | 3 | Residential | 50 | 65 | 65 | 65 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1E3 | 2 / Ldn | 10 | Residential | 50 | 63 | 63 | 63 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1E4 | 2 / Ldn | 4 | Residential | 50 | 82 | 82 | 83 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 1E5 | 2 / Ldn | 4 | Residential | 50 | 71 | 71 | 71 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1E6 | 2 / Ldn | 4 | Residential | 50 | 67 | 67 | 67 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1E7 | 2 / Ldn | 3 | Residential | 50 | 63 | 63 | 63 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1E8 | 2 / Ldn | 5 | Residential | 50 | 60 | 60 | 61 | 1 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 1F1 | 2 / Ldn | 15 | Residential | 50 | 81 | 81 | 81 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1F2 | 2 / Ldn | 4 | Residential | 50 | 80 | 80 | 80 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1F3 | 2 / Ldn | 8 | Residential | 50 | 62 | 62 | 62 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1F4 | 2 / Ldn | 12 | Residential | 50 | 82 | 82 | 83 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 1F5 | 3 / Leq | - | Open Space | 52 | 82 | 83 | 83 | 1 | Moderate: 2-5 dBA<br>Severe: >5 dBA | No Impact |
| 1F6 | 2 / Ldn | 11 | Residential | 50 | 74 | 74 | 74 | 0 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 1F7 | 2 / Ldn | 5 | Residential | 50 | 68 | 68 | 68 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1F8 | 2 / Ldn | 19 | Residential | 50 | 65 | 65 | 65 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1F9 | 2 / Ldn | 9 | Residential | 50 | 61 | 61 | 62 | 1 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 1G1 | 2 / Ldn | 4 | Residential | 50 | 71 | 71 | 71 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1G2 | 2 / Ldn | 21 | Residential | 50 | 68 | 68 | 68 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1G3 | 2 / Ldn | 19 | Residential | 50 | 66 | 66 | 66 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1G4 | 2 / Ldn | 26 | Residential | 50 | 63 | 63 | 63 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1G5 | 2 / Ldn | 1 | Residential | 50 | 79 | 79 | 79 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 1G6 | 2 / Ldn | 10 | Residential | 50 | 77 | 77 | 77 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1G7 | 2 / Ldn | 4 | Residential | 50 | 68 | 68 | 69 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1G8 | 2 / Ldn | 3 | Residential | 50 | 65 | 65 | 65 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1G9 | 3 / Leq | - | Cemetery | 52 | 69 | 70 | 71 | 2 | Moderate: 4-6 dBA<br>Severe: >6 dBA | No Impact |
| 1H1 | 2 / Ldn | 6 | Residential | 50 | 72 | 72 | 72 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1H2 | 2 / Ldn | 12 | Residential | 50 | 66 | 66 | 66 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1H3 | 2 / Ldn | 10 | Residential | 50 | 64 | 64 | 64 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1H4 | 2 / Ldn | 8 | Residential | 50 | 61 | 61 | 61 | 0 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 1H5 | 2 / Ldn | 4 | Residential | 50 | 78 | 78 | 78 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1H6 | 2 / Ldn | 14 | Residential | 50 | 75 | 75 | 75 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1H7 | 2 / Ldn | 13 | Residential | 50 | 68 | 68 | 68 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1H8 | 2 / Ldn | 12 | Residential | 50 | 65 | 65 | 65 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1H9 | 2 / Ldn | 19 | Residential | 50 | 62 | 62 | 62 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1I1 | 2 / Ldn | 1 | Residential | 50 | 66 | 67 | 67 | 1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1I2 | 2 / Ldn | 4 | Residential | 50 | 64 | 64 | 64 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1I3 | 2 / Ldn | 3 | Residential | 50 | 62 | 62 | 62 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1I4 | 2 / Ldn | 2 | Residential | 50 | 79 | 79 | 79 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1I5 | 2 / Ldn | 2 | Residential | 50 | 76 | 76 | 77 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 1I6 | 2 / Ldn | 4 | Residential | 50 | 69 | 69 | 69 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1I7 | 2 / Ldn | 2 | Residential | 50 | 65 | 65 | 65 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1I8 | 2 / Ldn | 6 | Residential | 50 | 63 | 63 | 63 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1J1 | 2 / Ldn | 8 | Residential | 50 | 84 | 84 | 84 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1J2 | 2 / Ldn | 10 | Residential | 50 | 69 | 69 | 69 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1J3 | 2 / Ldn | 13 | Residential | 50 | 67 | 67 | 67 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1J4 | 2 / Ldn | 12 | Residential | 50 | 64 | 64 | 64 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 1J5 | 2 / Ldn | 9 | Residential | 50 | 61 | 61 | 61 | 0 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 1J6 | 2 / Ldn | 3 | Residential | 50 | 79 | 79 | 79 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1J7 | 2 / Ldn | 6 | Residential | 50 | 76 | 76 | 76 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1J8 | 2 / Ldn | 9 | Residential | 50 | 69 | 69 | 69 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1J9 | 2 / Ldn | 9 | Residential | 50 | 65 | 66 | 66 | 1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1J10 | 2 / Ldn | 17 | Residential | 50 | 63 | 63 | 63 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1K1 | 2 / Ldn | 15 | Residential | 50 | 87 | 87 | 87 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1K2 | 2 / Ldn | 3 | Residential | 50 | 71 | 71 | 71 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1K3 | 2 / Ldn | 4 | Residential | 50 | 68 | 68 | 68 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1K4 | 2 / Ldn | 5 | Residential | 50 | 65 | 65 | 65 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1K5 | 2 / Ldn | 3 | Residential | 50 | 62 | 62 | 62 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1K6 | 2 / Ldn | 3 | Residential | 50 | 85 | 85 | 85 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1K7 | 2 / Ldn | 5 | Residential | 50 | 80 | 80 | 80 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1K8 | 2 / Ldn | 4 | Residential | 50 | 70 | 71 | 71 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1K9 | 2 / Ldn | 3 | Residential | 50 | 66 | 66 | 66 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1K10 | 2 / Ldn | 5 | Residential | 50 | 63 | 63 | 63 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1L1 | 2 / Ldn | 3 | Residential | 50 | 87 | 87 | 87 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1L2 | 2 / Ldn | 9 | Residential | 50 | 71 | 71 | 71 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1L3 | 2 / Ldn | 9 | Residential | 50 | 69 | 69 | 69 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1L4 | 2 / Ldn | 7 | Residential | 50 | 66 | 66 | 66 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1L5 | 2 / Ldn | 5 | Residential | 50 | 63 | 63 | 63 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1L6 | 2 / Ldn | 3 | Residential | 50 | 86 | 86 | 86 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1L7 | 2 / Ldn | 11 | Residential | 50 | 80 | 80 | 80 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1L8 | 2 / Ldn | 8 | Residential | 50 | 71 | 71 | 71 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1L9 | 2 / Ldn | 3 | Residential | 50 | 67 | 67 | 67 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 1L10 | 2 / Ldn | 13 | Residential | 50 | 64 | 64 | 65 | 1 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1L11 | 2 / Ldn | 3 | Residential | 50 | 63 | 64 | 64 | 1 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1M1 | 2 / Ldn | 11 | Residential | 50 | 74 | 74 | 74 | 0 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 1M3 | 2 / Ldn | 16 | Residential | 50 | 70 | 70 | 70 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1M4 | 2 / Ldn | 18 | Residential | 50 | 67 | 67 | 67 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1M5 | 2 / Ldn | 14 | Residential | 50 | 64 | 65 | 65 | 1 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1M6 | 2 / Ldn | 1 | Residential | 50 | 86 | 86 | 86 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1M7 | 2 / Ldn | 4 | Residential | 50 | 87 | 87 | 88 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 1M8 | 2 / Ldn | 6 | Residential | 50 | 80 | 79 | 82 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 1M9 | 2 / Ldn | 9 | Residential | 50 | 82 | 81 | 82 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1M10 | 2 / Ldn | 12 | Residential | 50 | 82 | 82 | 82 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 1M11 | 2 / Ldn | 5 | Residential | 50 | 78 | 76 | 80 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 1M12 | 2 / Ldn | 7 | Residential | 50 | 74 | 73 | 75 | 1 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 1M13 | 2 / Ldn | 6 | Residential | 50 | 73 | 73 | 73 | 0 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 1M14 | 2 / Ldn | 3 | Residential | 50 | 76 | 74 | 79 | 3 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Severe Impact |
| 1M15 | 2 / Ldn | 7 | Residential | 50 | 76 | 73 | 78 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 1M16 | 2 / Ldn | 7 | Residential | 50 | 71 | 70 | 72 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1M17 | 2 / Ldn | 3 | Residential | 50 | 68 | 68 | 68 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1M18 | 2 / Ldn | 7 | Residential | 50 | 73 | 71 | 76 | 3 | Moderate: 2-2 dBA<br>Severe: >2 dBA | Severe Impact |
| 1M19 | 2 / Ldn | 7 | Residential | 50 | 68 | 67 | 70 | 2 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate Impact |
| 1M20 | 2 / Ldn | 10 | Residential | 50 | 74 | 71 | 77 | 3 | Moderate: 2-2 dBA<br>Severe: >2 dBA | Severe Impact |
| 1M21 | 2 / Ldn | 4 | Residential | 50 | 69 | 67 | 71 | 2 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate Impact |
| 1N1 | 2 / Ldn | 10 | Residential | 50 | 75 | 74 | 77 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 1N2 | 2 / Ldn | 2 | Residential | 50 | 71 | 71 | 71 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1N3 | 2 / Ldn | 4 | Residential | 50 | 69 | 69 | 69 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 1N4 | 2 / Ldn | 5 | Residential | 50 | 73 | 71 | 74 | 1 | Moderate: 2-2 dBA Severe: >2 dBA | No Impact |
| 1N5 | 2 / Ldn | 7 | Residential | 50 | 66 | 66 | 66 | 0 | Moderate: 2-4 dBA Severe: >4 dBA | No Impact |
| 1N6 | 2 / Ldn | 1 | Residential | 50 | 69 | 67 | 71 | 2 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 1N7 | 2 / Ldn | 2 | Residential | 50 | 66 | 65 | 68 | 2 | Moderate: 2-4 dBA Severe: >4 dBA | Moderate Impact |
| 1N8 | 2 / Ldn | 8 | Residential | 50 | 63 | 63 | 63 | 0 | Moderate: 3-4 dBA Severe: >4 dBA | No Impact |
| 1N9 | 2 / Ldn | 4 | Residential | 50 | 85 | 83 | 87 | 2 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 1N10 | 2 / Ldn | 14 | Residential | 50 | 76 | 74 | 78 | 2 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 1N12 | 2 / Ldn | 22 | Residential | 50 | 73 | 71 | 75 | 2 | Moderate: 2-2 dBA Severe: >2 dBA | Moderate Impact |
| 1N13 | 2 / Ldn | 7 | Residential | 50 | 69 | 67 | 71 | 2 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 1N14 | 2 / Ldn | 6 | Residential | 50 | 64 | 64 | 64 | 0 | Moderate: 3-4 dBA Severe: >4 dBA | No Impact |
| 1O1 | 2 / Ldn | 1 | Residential | 50 | 79 | 75 | 81 | 2 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 1O2 | 2 / Ldn | 2 | Residential | 50 | 76 | 73 | 78 | 2 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 1O3 | 2 / Ldn | 5 | Residential | 50 | 70 | 68 | 72 | 2 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 1O4 | 2 / Ldn | 5 | Residential | 50 | 67 | 66 | 69 | 2 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 1O5 | 2 / Ldn | 6 | Residential | 50 | 79 | 79 | 82 | 3 | Moderate: 1-2 dBA Severe: >2 dBA | Severe Impact |
| 1O6 | 2 / Ldn | 1 | Residential | 50 | 70 | 70 | 73 | 3 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 1P1 | 2 / Ldn | 12 | Residential | 50 | 75 | 73 | 78 | 3 | Moderate: 1-2 dBA Severe: >2 dBA | Severe Impact |
| 1P2 | 2 / Ldn | 6 | Residential | 50 | 73 | 71 | 75 | 2 | Moderate: 2-2 dBA Severe: >2 dBA | Moderate Impact |
| 1P3 | 2 / Ldn | 4 | Residential | 50 | 71 | 70 | 74 | 3 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 1P4 | 2 / Ldn | 7 | Residential | 50 | 74 | 71 | 76 | 2 | Moderate: 2-2 dBA Severe: >2 dBA | Moderate Impact |
| 1P5 | 2 / Ldn | 3 | Residential | 50 | 81 | 81 | 84 | 3 | Moderate: 1-2 dBA Severe: >2 dBA | Severe Impact |
| 1P6 | 2 / Ldn | 7 | Residential | 50 | 77 | 77 | 80 | 3 | Moderate: 1-2 dBA Severe: >2 dBA | Severe Impact |
| 1P7 | 2 / Ldn | 10 | Residential | 50 | 72 | 72 | 72 | 0 | Moderate: 2-3 dBA Severe: >3 dBA | No Impact |
| 1P8 | 2 / Ldn | 7 | Residential | 50 | 68 | 68 | 67 | -1 | Moderate: 2-3 dBA Severe: >3 dBA | No Impact |
| 1P9 | 2 / Ldn | 16 | Residential | 50 | 66 | 66 | 64 | -2 | Moderate: 2-4 dBA Severe: >4 dBA | No Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 1Q1 | 2 / Ldn | 7 | Residential | 50 | 68 | 68 | 68 | 0 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1Q2 | 2 / Ldn | 9 | Residential | 50 | 62 | 62 | 65 | 3 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 1Q3 | 2 / Ldn | 8 | Residential | 50 | 61 | 61 | 64 | 3 | Moderate: 3-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 1Q4 | 2 / Ldn | 1 | Residential | 50 | 69 | 68 | 70 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 1Q5 | 2 / Ldn | 3 | Residential | 50 | 59 | 59 | 61 | 2 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 1Q6 | 2 / Ldn | 12 | Residential | 50 | 70 | 67 | 73 | 3 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate Impact |
| 1Q7 | 2 / Ldn | 1 | Residential | 50 | 69 | 69 | 72 | 3 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate Impact |
| 1Q8 | 2 / Ldn | 7 | Residential | 50 | 68 | 68 | 71 | 3 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate Impact |
| 1Q9 | 2 / Ldn | 4 | Residential | 50 | 74 | 74 | 77 | 3 | Moderate: 2-2 dBA<br>Severe: >2 dBA | Severe Impact |
| 1Q10 | 2 / Ldn | 12 | Residential | 50 | 64 | 64 | 66 | 2 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 1Q11 | 2 / Ldn | 6 | Residential | 50 | 69 | 70 | 71 | 2 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate Impact |
| 1Q12 | 2 / Ldn | 7 | Residential | 50 | 61 | 61 | 64 | 3 | Moderate: 3-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 1Q13 | 2 / Ldn | 3 | Residential | 50 | 66 | 66 | 66 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1Q14 | 2 / Ldn | 1 | Residential | 50 | 65 | 65 | 64 | -1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 1Q15 | 2 / Ldn | 11 | Residential | 50 | 59 | 59 | 61 | 2 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 1R1 | 2 / Ldn | 34 | Residential | 50 | 53 | 53 | 54 | 1 | Moderate: 5-8 dBA<br>Severe: >8 dBA | No Impact |
| 1R2 | 2 / Ldn | 12 | Residential | 50 | 59 | 59 | 64 | 5 | Moderate: 3-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 1R3 | 2 / Ldn | 64 | Residential | 50 | 56 | 56 | 59 | 3 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 1R4 | 2 / Ldn | 80 | Residential | 50 | 52 | 52 | 54 | 2 | Moderate: 5-9 dBA<br>Severe: >9 dBA | No Impact |
| 1S1 | 2 / Ldn | 40 | Residential | 50 | 54 | 54 | 54 | 0 | Moderate: 4-8 dBA<br>Severe: >8 dBA | No Impact |
| 1S2 | 2 / Ldn | 33 | Residential | 50 | 52 | 51 | 51 | -1 | Moderate: 5-9 dBA<br>Severe: >9 dBA | No Impact |
| 1T1 | 2 / Ldn | 23 | Residential | 50 | 59 | 59 | 58 | -1 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 1T2 | 2 / Ldn | 22 | Residential | 50 | 55 | 55 | 54 | -1 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 1T3 | 2 / Ldn | 32 | Residential | 50 | 54 | 53 | 53 | -1 | Moderate: 4-8 dBA<br>Severe: >8 dBA | No Impact |
| 1U2 | 2 / Ldn | 7 | Residential | 50 | 72 | 72 | 74 | 2 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 1U3 | 2 / Ldn | 12 | Residential | 50 | 71 | 72 | 74 | 3 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate Impact |
| 2A | 2 / Ldn | 5 | Residential | 50 | 79 | 79 | 81 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 2B | 2 / Ldn | 8 | Residential | 50 | 73 | 73 | 75 | 2 | Moderate: 2-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 2C | 2 / Ldn | 9 | Residential | 50 | 69 | 69 | 71 | 2 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate Impact |
| 2D | 2 / Ldn | 7 | Residential | 50 | 87 | 87 | 89 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 2E | 2 / Ldn | 62 | Residential | 50 | 79 | 79 | 81 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 2F | 2 / Ldn | 77 | Residential | 50 | 75 | 75 | 77 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 2G | 2 / Ldn | 38 | Residential | 50 | 70 | 70 | 72 | 2 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate Impact |
| 2H | 2 / Ldn | 8 | Residential | 50 | 83 | 83 | 85 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 2I | 2 / Ldn | 16 | Residential | 50 | 77 | 77 | 78 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 2J | 2 / Ldn | 26 | Residential | 50 | 71 | 72 | 73 | 2 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate Impact |
| 2K | 2 / Ldn | 19 | Residential | 50 | 66 | 67 | 68 | 2 | Moderate: 2-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 2L | 2 / Ldn | 93 | Residential | 50 | 66 | 67 | 69 | 3 | Moderate: 2-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 2M | 2 / Ldn | 5 | Residential | 50 | 65 | 66 | 68 | 3 | Moderate: 2-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 2N | 2 / Ldn | 8 | Residential | 50 | 63 | 64 | 66 | 3 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 2O | 2 / Ldn | 38 | Residential | 50 | 53 | 53 | 55 | 2 | Moderate: 5-8 dBA<br>Severe: >8 dBA | No Impact |
| 2P | 2 / Ldn | 2 | Residential | 50 | 77 | 77 | 78 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 2Q | 2 / Ldn | 5 | Residential | 50 | 73 | 74 | 74 | 1 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 2R | 2 / Ldn | 3 | Residential | 50 | 70 | 71 | 72 | 2 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate Impact |
| 3A | 2 / Ldn | 5 | Residential | 51 | 80 | 80 | 82 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 3B | 2 / Ldn | 11 | Residential | 51 | 73 | 73 | 75 | 2 | Moderate: 2-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 3C | 2 / Ldn | 10 | Residential | 51 | 70 | 70 | 72 | 2 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate Impact |
| 3D | 2 / Ldn | 9 | Residential | 51 | 66 | 66 | 68 | 2 | Moderate: 2-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 3E | 2 / Ldn | 1 | Residential | 51 | 63 | 63 | 65 | 2 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 3F | 2 / Ldn | 3 | Residential | 51 | 66 | 67 | 69 | 3 | Moderate: 2-4 dBA<br>Severe: >4 dBA | Moderate Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 3G | 2 / Ldn | 4 | Residential | 51 | 60 | 61 | 64 | 4 | Moderate: 3-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 3H | 2 / Ldn | 6 | Residential | 51 | 58 | 59 | 61 | 3 | Moderate: 3-6 dBA<br>Severe: >6 dBA | Moderate Impact |
| 3I | 2 / Ldn | 8 | Residential | 51 | 55 | 55 | 58 | 3 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 3J | 2 / Ldn | 10 | Residential | 51 | 54 | 54 | 56 | 2 | Moderate: 4-8 dBA<br>Severe: >8 dBA | No Impact |
| 3K | 2 / Ldn | 16 | Residential | 51 | 53 | 53 | 55 | 2 | Moderate: 5-8 dBA<br>Severe: >8 dBA | No Impact |
| 3L | 2 / Ldn | 40 | Residential | 51 | 52 | 53 | 54 | 2 | Moderate: 5-9 dBA<br>Severe: >9 dBA | No Impact |
| 3M | 2 / Ldn | 33 | Residential | 51 | 61 | 62 | 65 | 4 | Moderate: 3-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 3N | 2 / Ldn | 37 | Residential | 51 | 57 | 57 | 60 | 3 | Moderate: 4-6 dBA<br>Severe: >6 dBA | No Impact |
| 3O | 2 / Ldn | 46 | Residential | 51 | 55 | 55 | 58 | 3 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 3P | 2 / Ldn | 59 | Residential | 51 | 53 | 54 | 56 | 3 | Moderate: 5-8 dBA<br>Severe: >8 dBA | No Impact |
| 3Q | 2 / Ldn | 78 | Residential | 51 | 52 | 53 | 54 | 2 | Moderate: 5-9 dBA<br>Severe: >9 dBA | No Impact |
| 4A | 3 / Leq | - | School | 52 | 68 | 68 | 63 | -5 | Moderate: 4-6 dBA<br>Severe: >6 dBA | No Impact |
| 4B | 2 / Ldn | 36 | Residential | 50 | 62 | 64 | 61 | -1 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 5A | 2 / Ldn | 31 | Residential | 48 | 77 | 79 | 67 | -10 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 5AA | 2 / Ldn | 42 | Residential | 48 | 65 | 67 | 56 | -9 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 5AB | 2 / Ldn | 79 | Residential | 48 | 61 | 63 | 54 | -7 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 5AC | 2 / Ldn | 44 | Residential | 48 | 68 | 70 | 56 | -12 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 5AD | 2 / Ldn | 118 | Residential | 48 | 65 | 67 | 54 | -11 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 5AE | 2 / Ldn | 51 | Residential | 48 | 64 | 67 | 56 | -8 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 5AF | 2 / Ldn | 65 | Residential | 48 | 61 | 64 | 54 | -7 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 5AG | 2 / Ldn | 24 | Residential | 48 | 64 | 66 | 56 | -8 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 5AH | 2 / Ldn | 36 | Residential | 48 | 60 | 61 | 53 | -7 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 5AI | 2 / Ldn | 25 | Residential | 48 | 67 | 68 | 56 | -11 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 5AJ | 2 / Ldn | 40 | Residential | 48 | 63 | 65 | 53 | -10 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 5B | 2 / Ldn | 42 | Residential | 48 | 69 | 71 | 60 | -9 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 5C | 2 / Ldn | 12 | Residential | 48 | 73 | 76 | 71 | -2 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 5D | 2 / Ldn | 47 | Residential | 48 | 73 | 75 | 64 | -9 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 5E | 2 / Ldn | 41 | Residential | 48 | 68 | 70 | 59 | -9 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 5F | 2 / Ldn | 11 | Residential | 48 | 78 | 80 | 69 | -9 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 5G | 2 / Ldn | 15 | Residential | 48 | 70 | 72 | 62 | -8 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 5H | 2 / Ldn | 13 | Residential | 48 | 67 | 69 | 59 | -8 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 5I | 2 / Ldn | 33 | Residential | 48 | 72 | 74 | 63 | -9 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 5J | 2 / Ldn | 29 | Residential | 48 | 66 | 68 | 57 | -9 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 5L | 2 / Ldn | 46 | Residential | 48 | 79 | 81 | 67 | -12 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 5M | 2 / Ldn | 40 | Residential | 48 | 72 | 74 | 60 | -12 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 5N | 2 / Ldn | 13 | Residential | 48 | 80 | 82 | 70 | -10 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 5O | 2 / Ldn | 14 | Residential | 48 | 74 | 75 | 63 | -11 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 5P | 2 / Ldn | 17 | Residential | 48 | 70 | 72 | 59 | -11 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 5Q | 2 / Ldn | 16 | Residential | 48 | 75 | 77 | 63 | -12 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 5R | 2 / Ldn | 19 | Residential | 48 | 69 | 71 | 58 | -11 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 5S | 2 / Ldn | 27 | Residential | 48 | 73 | 78 | 74 | 1 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 5T | 2 / Ldn | 30 | Residential | 48 | 60 | 64 | 61 | 1 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 5U | 2 / Ldn | 27 | Residential | 48 | 56 | 60 | 57 | 1 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 5V | 2 / Ldn | 34 | Residential | 48 | 61 | 65 | 62 | 1 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 5W | 2 / Ldn | 39 | Residential | 48 | 55 | 59 | 57 | 2 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 5X | 2 / Ldn | 78 | Residential | 48 | 53 | 56 | 54 | 1 | Moderate: 5-8 dBA<br>Severe: >8 dBA | No Impact |
| 5Y | 2 / Ldn | 64 | Residential | 48 | 63 | 65 | 55 | -8 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 5Z | 2 / Ldn | 41 | Residential | 48 | 66 | 68 | 55 | -11 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 6A | 2 / Ldn | 29 | Residential | 48 | 75 | 77 | 74 | -1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 6B | 2 / Ldn | 22 | Residential | 48 | 66 | 68 | 65 | -1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 6C | 2 / Ldn | 13 | Residential | 48 | 63 | 64 | 61 | -2 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 6D | 2 / Ldn | 55 | Residential | 48 | 76 | 78 | 76 | 0 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 6E | 2 / Ldn | 77 | Residential | 48 | 66 | 67 | 65 | -1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 6F | 2 / Ldn | 76 | Residential | 48 | 62 | 63 | 61 | -1 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 6K | 2 / Ldn | 129 | Residential | 48 | 59 | 60 | 58 | -1 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 6N | 2 / Ldn | 64 | Residential | 48 | 60 | 62 | 60 | 0 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 6O | 2 / Ldn | 17 | Residential | 48 | 60 | 61 | 60 | 0 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 7A | 2 / Ldn | 45 | Residential | 51 | 66 | 69 | 67 | 1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 7B | 2 / Ldn | 26 | Residential | 51 | 57 | 60 | 59 | 2 | Moderate: 4-6 dBA<br>Severe: >6 dBA | No Impact |
| 7C | 2 / Ldn | 44 | Residential | 51 | 55 | 57 | 56 | 1 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 7D | 2 / Ldn | 15 | Residential | 51 | 67 | 70 | 65 | -2 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 7E | 2 / Ldn | 21 | Residential | 51 | 60 | 63 | 58 | -2 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 7F | 2 / Ldn | 18 | Residential | 51 | 56 | 60 | 55 | -1 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 7G | 2 / Ldn | 26 | Residential | 51 | 54 | 57 | 53 | -1 | Moderate: 4-8 dBA<br>Severe: >8 dBA | No Impact |
| 7H | 3 / Leq | - | Open Space | 53 | 64 | 65 | 64 | 0 | Moderate: 5-8 dBA<br>Severe: >8 dBA | No Impact |
| 7I | 2 / Ldn | 45 | Residential | 51 | 67 | 71 | 66 | -1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 7J | 2 / Ldn | 17 | Residential | 51 | 58 | 62 | 57 | -1 | Moderate: 3-6 dBA<br>Severe: >6 dBA | No Impact |
| 7K | 2 / Ldn | 18 | Residential | 51 | 55 | 58 | 54 | -1 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 7L | 2 / Ldn | 6 | Residential | 51 | 70 | 74 | 67 | -3 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 7M | 2 / Ldn | 9 | Residential | 51 | 60 | 64 | 58 | -2 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 7N | 2 / Ldn | 4 | Residential | 51 | 56 | 59 | 54 | -2 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 7R | 2 / Ldn | 18 | Residential | 51 | 60 | 64 | 58 | -2 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 7S | 3 / Leq | - | Open Space | 53 | 66 | 67 | 65 | -1 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 8B | 2 / Ldn | 31 | Residential | 50 | 75 | 75 | 74 | -1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 8C | 2 / Ldn | 65 | Residential | 50 | 68 | 69 | 67 | -1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 8D | 2 / Ldn | 59 | Residential | 50 | 64 | 65 | 63 | -1 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 8E | 2 / Ldn | 69 | Residential | 50 | 61 | 61 | 60 | -1 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 8G | 2 / Ldn | 109 | Residential | 50 | 58 | 58 | 57 | -1 | Moderate: 3-6 dBA<br>Severe: >6 dBA | No Impact |
| 8H | 2 / Ldn | 129 | Residential | 50 | 55 | 55 | 54 | -1 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 8I | 2 / Ldn | 75 | Residential | 50 | 68 | 68 | 67 | -1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 9A | 3 / Leq | - | School | 52 | 70 | 71 | 67 | -3 | Moderate: 4-6 dBA<br>Severe: >6 dBA | No Impact |
| 9B | 2 / Ldn | 18 | Residential | 50 | 73 | 74 | 74 | 1 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 9C | 2 / Ldn | 24 | Residential | 50 | 65 | 66 | 65 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 9D | 2 / Ldn | 15 | Residential | 50 | 61 | 62 | 61 | 0 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 9E | 2 / Ldn | 18 | Residential | 50 | 76 | 77 | 77 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 9F | 2 / Ldn | 19 | Residential | 50 | 65 | 66 | 66 | 1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 9G | 2 / Ldn | 11 | Residential | 50 | 61 | 62 | 61 | 0 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 9J | 2 / Ldn | 20 | Residential | 50 | 74 | 75 | 75 | 1 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 9K | 2 / Ldn | 30 | Residential | 50 | 66 | 67 | 67 | 1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 9L | 2 / Ldn | 27 | Residential | 50 | 62 | 63 | 62 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 9M | 2 / Ldn | 24 | Residential | 50 | 58 | 59 | 58 | 0 | Moderate: 3-6 dBA<br>Severe: >6 dBA | No Impact |
| 9N | 2 / Ldn | 74 | Residential | 50 | 55 | 56 | 55 | 0 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 9O | 2 / Ldn | 91 | Residential | 50 | 58 | 59 | 58 | 0 | Moderate: 3-6 dBA<br>Severe: >6 dBA | No Impact |
| 9P | 2 / Ldn | 147 | Residential | 50 | 56 | 56 | 55 | -1 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 10A | 3 / Leq | - | Open Space | 52 | 65 | 66 | 71 | 6 | Moderate: 4-7 dBA<br>Severe: >7 dBA | Moderate Impact |
| 10B | 2 / Ldn | 3 | Residential | 50 | 67 | 68 | 72 | 5 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Severe Impact |
| 10C | 2 / Ldn | 4 | Residential | 50 | 64 | 65 | 68 | 4 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 10D | 2 / Ldn | 11 | Residential | 50 | 63 | 64 | 67 | 4 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 10E | 2 / Ldn | 31 | Residential | 50 | 72 | 73 | 77 | 5 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Severe Impact |
| 10F | 2 / Ldn | 17 | Residential | 50 | 63 | 64 | 67 | 4 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 10G | 2 / Ldn | 13 | Residential | 50 | 59 | 60 | 63 | 4 | Moderate: 3-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 10H | 2 / Ldn | 15 | Residential | 50 | 56 | 57 | 60 | 4 | Moderate: 4-7 dBA<br>Severe: >7 dBA | Moderate Impact |
| 10J | 2 / Ldn | 23 | Residential | 50 | 54 | 54 | 57 | 3 | Moderate: 4-8 dBA<br>Severe: >8 dBA | No Impact |
| 11A | 2 / Ldn | 6 | Residential | 48 | 61 | 62 | 63 | 2 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 11B | 2 / Ldn | 35 | Residential | 48 | 67 | 68 | 72 | 5 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Severe Impact |
| 11C | 2 / Ldn | 16 | Residential | 48 | 58 | 59 | 63 | 5 | Moderate: 3-6 dBA<br>Severe: >6 dBA | Moderate Impact |
| 11D | 2 / Ldn | 39 | Residential | 48 | 58 | 59 | 60 | 2 | Moderate: 3-6 dBA<br>Severe: >6 dBA | No Impact |
| 11E | 2 / Ldn | 40 | Residential | 48 | 55 | 56 | 58 | 3 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 11F | 3 / Leq | - | Open Space | 50 | 60 | 67 | 64 | 4 | Moderate: 6-9 dBA<br>Severe: >9 dBA | No Impact |
| 11G | 2 / Ldn | 64 | Residential | 48 | 58 | 61 | 53 | -5 | Moderate: 3-6 dBA<br>Severe: >6 dBA | No Impact |
| 11H | 2 / Ldn | 54 | Residential | 48 | 52 | 54 | 50 | -2 | Moderate: 5-9 dBA<br>Severe: >9 dBA | No Impact |
| 11I | 2 / Ldn | 43 | Residential | 48 | 62 | 64 | 53 | -9 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 11J | 2 / Ldn | 17 | Residential | 48 | 53 | 56 | 49 | -4 | Moderate: 5-8 dBA<br>Severe: >8 dBA | No Impact |
| 11K | 3 / Leq | - | Open Space | 50 | 60 | 64 | 60 | 0 | Moderate: 6-9 dBA<br>Severe: >9 dBA | No Impact |
| 11L | 2 / Ldn | 3 | Residential | 48 | 66 | 69 | 64 | -2 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 11M | 2 / Ldn | 9 | Residential | 48 | 64 | 66 | 67 | 3 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 11N | 2 / Ldn | 8 | Residential | 48 | 57 | 59 | 62 | 5 | Moderate: 4-6 dBA<br>Severe: >6 dBA | Moderate Impact |
| 11O | 2 / Ldn | 5 | Residential | 48 | 58 | 59 | 66 | 8 | Moderate: 3-6 dBA<br>Severe: >6 dBA | Severe Impact |
| 11R | 2 / Ldn | 12 | Residential | 48 | 55 | 57 | 49 | -6 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 11S | 3 / Leq | - | Open Space | 50 | 60 | 67 | 63 | 3 | Moderate: 6-9 dBA<br>Severe: >9 dBA | No Impact |
| 11T | 2 / Ldn | 6 | Residential | 48 | 62 | 65 | 55 | -7 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 11U | 2 / Ldn | 4 | Residential | 48 | 65 | 67 | 55 | -10 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 11V | 3 / Leq | - | School | 50 | 52 | 52 | 52 | 0 | Moderate: 9-14 dBA<br>Severe: >14 dBA | No Impact |
| 12AE | 2 / Ldn | 28 | Residential | 50 | 66 | 66 | 67 | 1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 12AH | 2 / Ldn | 7 | Residential | 50 | 63 | 63 | 65 | 2 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 12C | 2 / Ldn | 90 | Residential | 50 | 65 | 65 | 67 | 2 | Moderate: 2-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 12D | 2 / Ldn | 3 | Residential | 50 | 62 | 62 | 63 | 1 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 12J | 2 / Ldn | 96 | Residential | 50 | 66 | 66 | 67 | 1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 12M | 2 / Ldn | 71 | Residential | 50 | 66 | 66 | 66 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 12P | 2 / Ldn | 46 | Residential | 50 | 69 | 69 | 68 | -1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 12S | 3 / Leq | - | Open Space | 52 | 65 | 65 | 68 | 3 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 12T | 3 / Leq | - | Open Space | 52 | 63 | 63 | 65 | 2 | Moderate: 5-8 dBA<br>Severe: >8 dBA | No Impact |
| 12U | 2 / Ldn | 12 | Residential | 50 | 58 | 58 | 66 | 8 | Moderate: 3-6 dBA<br>Severe: >6 dBA | Severe Impact |
| 13A | 2 / Ldn | 17 | Residential | 53 | 74 | 76 | 74 | 0 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 13B | 2 / Ldn | 23 | Residential | 53 | 68 | 69 | 67 | -1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 13C | 2 / Ldn | 11 | Residential | 53 | 68 | 70 | 72 | 4 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Severe Impact |
| 13D | 2 / Ldn | 17 | Residential | 53 | 62 | 63 | 69 | 7 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Severe Impact |
| 13E | 2 / Ldn | 21 | Residential | 53 | 65 | 65 | 68 | 3 | Moderate: 2-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 14A | 3 / Leq | - | Open Space | 52 | 73 | 71 | 71 | -2 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 14B | 2 / Ldn | 81 | Residential | 50 | 77 | 78 | 76 | -1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 14C | 2 / Ldn | 59 | Residential | 50 | 66 | 67 | 65 | -1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 14D | 2 / Ldn | 68 | Residential | 50 | 62 | 63 | 61 | -1 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 14E | 2 / Ldn | 131 | Residential | 50 | 58 | 60 | 58 | 0 | Moderate: 3-6 dBA<br>Severe: >6 dBA | No Impact |
| 14F | 2 / Ldn | 7 | Residential | 50 | 69 | 69 | 70 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 14G | 2 / Ldn | 34 | Residential | 50 | 62 | 62 | 63 | 1 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 14H | 2 / Ldn | 22 | Residential | 50 | 58 | 58 | 59 | 1 | Moderate: 3-6 dBA<br>Severe: >6 dBA | No Impact |
| 14I | 2 / Ldn | 39 | Residential | 50 | 66 | 66 | 67 | 1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 14J | 2 / Ldn | 31 | Residential | 50 | 59 | 59 | 60 | 1 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 14K | 3 / Leq | - | Open Space | 52 | 66 | 66 | 67 | 1 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 14L | 2 / Ldn | 38 | Residential | 50 | 67 | 69 | 73 | 6 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Severe Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 14M | 2 / Ldn | 20 | Residential | 50 | 60 | 61 | 65 | 5 | Moderate: 3-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 14N | 2 / Ldn | 11 | Residential | 50 | 57 | 58 | 61 | 4 | Moderate: 4-6 dBA<br>Severe: >6 dBA | Moderate Impact |
| 14O | 3 / Leq | - | School | 52 | 53 | 55 | 56 | 3 | Moderate: 8-13 dBA<br>Severe: >13 dBA | No Impact |
| 14S | 2 / Ldn | 37 | Residential | 50 | 64 | 66 | 64 | 0 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 14T | 2 / Ldn | 10 | Residential | 50 | 61 | 61 | 63 | 2 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 14U | 2 / Ldn | 21 | Residential | 50 | 56 | 55 | 56 | 0 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 14V | 2 / Ldn | 75 | Residential | 50 | 56 | 56 | 57 | 1 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 14W | 2 / Ldn | 20 | Residential | 50 | 54 | 55 | 58 | 4 | Moderate: 4-8 dBA<br>Severe: >8 dBA | Moderate Impact |
| 15A | 2 / Ldn | 13 | Residential | 56 | 69 | 70 | 71 | 2 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate Impact |
| 15B | 2 / Ldn | 9 | Residential | 56 | 64 | 65 | 66 | 2 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 15C | 2 / Ldn | 9 | Residential | 56 | 62 | 62 | 63 | 1 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 15E | 3 / Leq | - | Open Space | 58 | 58 | 58 | 60 | 2 | Moderate: 6-10 dBA<br>Severe: >10 dBA | No Impact |
| 16A | 3 / Leq | - | Open Space | 46 | 67 | 63 | 67 | 0 | Moderate: 4-7 dBA<br>Severe: >7 dBA | No Impact |
| 16B | 3 / Leq | - | School | 46 | 62 | 59 | 63 | 1 | Moderate: 5-8 dBA<br>Severe: >8 dBA | No Impact |
| 16C | 2 / Ldn | 48 | Residential | 44 | 70 | 70 | 69 | -1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 16D | 2 / Ldn | 9 | Residential | 44 | 75 | 74 | 72 | -3 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 16E | 2 / Ldn | 54 | Residential | 44 | 65 | 65 | 64 | -1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 16F | 2 / Ldn | 24 | Residential | 44 | 75 | 74 | 71 | -4 | Moderate: 1-2 dBA<br>Severe: >2 dBA | No Impact |
| 16G | 2 / Ldn | 32 | Residential | 44 | 63 | 62 | 62 | -1 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 16H | 2 / Ldn | 15 | Residential | 44 | 69 | 68 | 67 | -2 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 16I | 2 / Ldn | 17 | Residential | 44 | 62 | 60 | 60 | -2 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 16J | 2 / Ldn | 26 | Residential | 44 | 58 | 58 | 59 | 1 | Moderate: 3-6 dBA<br>Severe: >6 dBA | No Impact |
| 16K | 2 / Ldn | 41 | Residential | 44 | 58 | 58 | 58 | 0 | Moderate: 3-6 dBA<br>Severe: >6 dBA | No Impact |
| 16L | 2 / Ldn | 35 | Residential | 44 | 57 | 57 | 56 | -1 | Moderate: 4-6 dBA<br>Severe: >6 dBA | No Impact |
| 17A | 2 / Ldn | 3 | Residential | 51 | 67 | 68 | 66 | -1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 17B | 2 / Ldn | 36 | Residential | 51 | 61 | 62 | 64 | 3 | Moderate: 3-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 17C | 2 / Ldn | 20 | Residential | 51 | 67 | 69 | 74 | 7 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Severe Impact |
| 17E | 2 / Ldn | 5 | Residential | 51 | 66 | 66 | 66 | 0 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 18A | 2 / Ldn | 65 | Residential | 57 | 69 | 71 | 74 | 5 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Severe Impact |
| 18C | 2 / Ldn | 33 | Residential | 57 | 59 | 60 | 61 | 2 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 18D | 2 / Ldn | 60 | Residential | 57 | 58 | 59 | 60 | 2 | Moderate: 3-6 dBA<br>Severe: >6 dBA | No Impact |
| 18E | 2 / Ldn | 35 | Residential | 57 | 66 | 68 | 70 | 4 | Moderate: 2-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 18F | 2 / Ldn | 27 | Residential | 57 | 60 | 61 | 63 | 3 | Moderate: 3-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 18G | 2 / Ldn | 21 | Residential | 57 | 59 | 60 | 62 | 3 | Moderate: 3-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 18H | 2 / Ldn | 3 | Residential | 57 | 66 | 68 | 70 | 4 | Moderate: 2-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 18I | 2 / Ldn | 3 | Residential | 57 | 62 | 63 | 65 | 3 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 18J | 2 / Ldn | 92 | Residential | 57 | 57 | 58 | 58 | 1 | Moderate: 4-6 dBA<br>Severe: >6 dBA | No Impact |
| 18K | 2 / Ldn | 41 | Residential | 57 | 58 | 58 | 59 | 1 | Moderate: 3-6 dBA<br>Severe: >6 dBA | No Impact |
| 18L | 2 / Ldn | 52 | Residential | 57 | 57 | 58 | 58 | 1 | Moderate: 4-6 dBA<br>Severe: >6 dBA | No Impact |
| 19A | 2 / Ldn | 50 | Residential | 55 | 74 | 73 | 75 | 1 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 19AA | 2 / Ldn | 8 | Residential | 55 | 78 | 77 | 79 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19AB | 2 / Ldn | 8 | Residential | 55 | 71 | 70 | 72 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19AC | 2 / Ldn | 8 | Residential | 55 | 75 | 74 | 76 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19AD | 2 / Ldn | 6 | Residential | 55 | 69 | 68 | 70 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19AE | 2 / Ldn | 17 | Residential | 55 | 66 | 65 | 67 | 1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 19AF | 2 / Ldn | 8 | Residential | 55 | 80 | 79 | 81 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19AG | 2 / Ldn | 15 | Residential | 55 | 67 | 66 | 68 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19AH | 2 / Ldn | 4 | Residential | 55 | 76 | 75 | 77 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19AI | 2 / Ldn | 4 | Residential | 55 | 70 | 69 | 71 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19AJ | 2 / Ldn | 62 | Residential | 55 | 67 | 66 | 68 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 19AK | 2 / Ldn | 6 | Residential | 55 | 75 | 74 | 76 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19AL | 2 / Ldn | 71 | Residential | 55 | 68 | 67 | 69 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19AM | 2 / Ldn | 5 | Residential | 55 | 83 | 82 | 84 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19AN | 2 / Ldn | 2 | Residential | 55 | 73 | 72 | 74 | 1 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 19AO | 2 / Ldn | 6 | Residential | 55 | 69 | 68 | 70 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19AP | 2 / Ldn | 18 | Residential | 55 | 82 | 81 | 83 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19AQ | 2 / Ldn | 10 | Residential | 55 | 73 | 72 | 74 | 1 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 19AR | 2 / Ldn | 31 | Residential | 55 | 69 | 68 | 70 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19AS | 2 / Ldn | 16 | Residential | 55 | 83 | 82 | 84 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19AT | 2 / Ldn | 12 | Residential | 55 | 74 | 73 | 75 | 1 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 19AU | 2 / Ldn | 26 | Residential | 55 | 69 | 68 | 70 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19AV | 2 / Ldn | 3 | Residential | 55 | 73 | 72 | 74 | 1 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 19AW | 2 / Ldn | 57 | Residential | 55 | 70 | 69 | 71 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19AX | 2 / Ldn | 10 | Residential | 55 | 78 | 77 | 79 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19AY | 2 / Ldn | 16 | Residential | 55 | 71 | 70 | 72 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19AZ | 2 / Ldn | 78 | Residential | 55 | 67 | 66 | 68 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19B | 2 / Ldn | 30 | Residential | 55 | 64 | 63 | 65 | 1 | Moderate: 3-4 dBA<br>Severe: >4 dBA | No Impact |
| 19BA | 2 / Ldn | 45 | Residential | 55 | 79 | 78 | 80 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19BB | 2 / Ldn | 44 | Residential | 55 | 70 | 69 | 71 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19BC | 2 / Ldn | 64 | Residential | 55 | 67 | 66 | 68 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19BD | 2 / Ldn | 45 | Residential | 55 | 72 | 71 | 73 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19C | 2 / Ldn | 146 | Residential | 55 | 61 | 60 | 62 | 1 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 19D | 3 / Leq | - | Open Space | 57 | 77 | 77 | 79 | 2 | Moderate: 2-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 19E | 2 / Ldn | 149 | Residential | 55 | 65 | 64 | 66 | 1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 19F | 2 / Ldn | 12 | Residential | 55 | 81 | 80 | 82 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |

**Table E-2 General Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 19G | 2 / Ldn | 20 | Residential | 55 | 71 | 70 | 72 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19H | 2 / Ldn | 9 | Residential | 55 | 85 | 84 | 86 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19I | 2 / Ldn | 7 | Residential | 55 | 75 | 74 | 76 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19J | 2 / Ldn | 8 | Residential | 55 | 70 | 69 | 71 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19K | 2 / Ldn | 6 | Residential | 55 | 80 | 79 | 81 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19L | 2 / Ldn | 3 | Residential | 55 | 71 | 70 | 72 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19M | 3 / Leq | - | Open Space | 57 | 84 | 84 | 86 | 2 | Moderate: 2-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 19N | 2 / Ldn | 24 | Residential | 55 | 81 | 80 | 82 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19O | 2 / Ldn | 17 | Residential | 55 | 73 | 72 | 74 | 1 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 19P | 2 / Ldn | 29 | Residential | 55 | 70 | 69 | 71 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19Q | 3 / Leq | - | Open Space | 57 | 78 | 78 | 80 | 2 | Moderate: 2-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 19R | 2 / Ldn | 21 | Residential | 55 | 78 | 77 | 80 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19S | 2 / Ldn | 22 | Residential | 55 | 70 | 69 | 71 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19T | 2 / Ldn | 46 | Residential | 55 | 66 | 65 | 67 | 1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 19U | 3 / Leq | - | Open Space | 57 | 82 | 82 | 84 | 2 | Moderate: 2-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 19V | 2 / Ldn | 15 | Residential | 55 | 74 | 73 | 75 | 1 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 19W | 2 / Ldn | 40 | Residential | 55 | 68 | 66 | 69 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |

**Table E-3 - General Noise Assessment - Interior Sound Levels**

| Receptor ID | Receptor Name, Location | FHWA Interior Noise Criterion Leq (dBA) | Window Condition and Building Type (i.e., operable or non-operable windows, air-conditioning, masonry or wood frame) | Noise Reduction Factor [1] (dBA) | Exterior Existing Predicted Train Noise [2] Leq (dBA) | Interior Existing Predicted Train Noise [3] $L_{eq}$ (dBA) | Exterior No Build Predicted Train Noise [2] $L_{eq}$ (dBA) | Interior No Build Predicted Train Noise [3] $L_{eq}$ (dBA) | Exterior Build Predicted Train Noise [2] $L_{eq}$ (dBA) | Interior Build Predicted Train Noise [3] $L_{eq}$ (dBA) | Interior Predicted Build Approach or Exceed 52 dBA? | Level of Interior Noise Impact [4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1M2 | Ashburn Baptist Church, 3647 W. 83rd St., 773-735-6205 | 52 | non-operable windows, window air-conditioning, brick building | 25 | 73 | 48 | 74 | 49 | 75 | 50 | No | None |
| 1N11 | Ashburn Community Elementary School, 8300 S. St. Louis Avenue, (773) 535-7860 | 52 | operable windows, no visible air-conditioning, brick building | 10 | 68 | 58 | 69 | 59 | 70 | 60 | Yes | Impact |
| 1U1 | Monument of Faith, 2750 West Columbus Ave., (773) 918-0180 | 52 | non-operable windows, air-conditioning on roof, stucco building, basketball courts outside | 25 | 74 | 49 | 75 | 50 | 75 | 50 | No | None |
| 5K | New St Paul C.O.G.I.C, 2113 West Columbus Ave. | 52 | operable windows, no visibile air conditioning, brick building | 10 | 52 | 42 | 54 | 44 | 54 | 44 | No | None |
| 6G | Grace Fellowship Bible Church, 1720 W. 75th Pl.,(773) 483-1312 | 52 | non-operable windows, air-conditioning on roof, brick bldg | 25 | 71 | 46 | 74 | 49 | 72 | 47 | No | None |
| 6H | New Israelite Missionary Baptist Church, 1625 W. 75th Pl., (773) 487-4591 | 52 | non-operable windows, air-conditioning, stucco building | 25 | 64 | 39 | 67 | 42 | 66 | 41 | No | None |
| 6I | God's Way Apostolic Faith Church, 7435 S. Ashland Ave., (773) 783-5050 | 52 | operable windows, air-conditioning on roof, brick bldg | 10 | 68 | 58 | 70 | 60 | 68 | 58 | Yes | Impact |
| 6J | Freedom Temple Church of God in Christ., 1459 W. 74th St., (773) 483-1140 | 52 | operable windows, air-conditioning, concrete building, daycare play area outside | 10 | 67 | 57 | 68 | 58 | 67 | 57 | Yes | Impact |
| 6L | Holy Covenant MB Church, 1722 W 75th Pl., (773) 483-6676 | 52 | non-operable windows, air-conditioning on roof, brick bldg | 25 | 71 | 46 | 74 | 49 | 72 | 47 | No | None |
| 6M | Church of Christ., 1514 W. 74th St., (773) 224-9279 | 52 | non-operable windows, air-conditioning, brick building | 25 | 55 | 30 | 57 | 32 | 55 | 30 | No | None |
| 7O | First Church of Love and Faith, 2140 W 79th St., (773) 224-6800 | 52 | non-operable windows, air-conditioning on roof, brick bldg | 25 | 59 | 34 | 61 | 36 | 60 | 35 | No | None |
| 7P | Liberty Temple Full Gospel Church, 2233 W. 79th St., (773) 737-7843 | 52 | non-operable window, air-conditioning on roof, brick building | 25 | 58 | 33 | 61 | 36 | 60 | 35 | No | None |
| 7Q | Kingdom Hall of Jehovah's Witness, 8137 S Western Ave., (773) 476-7789 | 52 | non-operable windows, air-conditioning, brick building | 25 | 54 | 29 | 55 | 30 | 54 | 29 | No | None |
| 8A | Thurgood Marshall Library, 7506 South Racine Ave., (312) 747-5927 | 52 | non-operable windows, air-conditioning, brick building, outside reading garden/seating area | 25 | 70 | 45 | 72 | 47 | 71 | 46 | No | None |
| 8F | 1st Corinthian Baptist Church, 7500 S. Halsted St. | 52 | non-operable windows, air-conditioning, brick building | 25 | 69 | 44 | 71 | 46 | 70 | 45 | No | None |
| 8J | Celestial Praise Ministries, 7526 S. Halsted St., (773) 779-1100 | 52 | operable windows, no visible air-conditioning, brick building | 10 | 56 | 46 | 58 | 48 | 57 | 47 | No | None |

**Table E-3 - General Noise Assessment - Interior Sound Levels**

| Receptor ID | Receptor Name, Location | FHWA Interior Noise Criterion Leq (dBA) | Window Condition and Building Type (i.e., operable or non-operable windows, air-conditioning, masonry or wood frame) | Noise Reduction Factor [1] (dBA) | Exterior Existing Predicted Train Noise [2] Leq (dBA) | Interior Existing Predicted Train Noise [3] $L_{eq}$ (dBA) | Exterior No Build Predicted Train Noise [2] $L_{eq}$ (dBA) | Interior No Build Predicted Train Noise [3] $L_{eq}$ (dBA) | Exterior Build Predicted Train Noise [2] $L_{eq}$ (dBA) | Interior Build Predicted Train Noise [3] $L_{eq}$ (dBA) | Interior Predicted Build Approach or Exceed 52 dBA? | Level of Interior Noise Impact [4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9I | New Light Evangelical Baptist Church, 7426 S. Halsted St., (773) 846-6466 | 52 | non-operable windows, air-conditioning on roof, brick bldg | 25 | 59 | 34 | 61 | 36 | 61 | 36 | No | None |
| 10I | Mt. Ararat Community Church, 7541 S Halsted St., (773) 874-4670 | 52 | non-operable windows, air-conditioning on roof, brick bldg | 25 | 50 | 25 | 52 | 27 | 56 | 31 | No | None |
| 10K | Shiloh M.B. Church, 7537 S. Halsted St. | 52 | operable windows, no visibile air conditioning, brick building | 10 | 50 | 40 | 52 | 42 | 57 | 47 | No | None |
| 11P | Good Hope Missionary Baptist Church, 7101 S Union Ave. | 52 | non-operable windows, air-conditioning, brick building | 25 | 45 | 20 | 53 | 28 | 49 | 24 | No | None |
| 11Q | Word of God Life Changing Ministries C.O. G.I.C, 514 W 71st St. (773) 264-2033 | 52 | no windows, air-conditioning, brick building | 25 | 47 | 22 | 54 | 29 | 50 | 25 | No | None |
| 12I | Parker Elementary Community Academy, 6800 South Stewart Ave. (773) 535-3375 & Amandla Elementary Charter School (773) 396-8022 | 52 | operable windows, no visible air-conditioning, brick building | 10 | 62 | 52 | 62 | 52 | 64 | 54 | Yes | Impact |
| 12Z | Mount Nebo Baptist Church, 354 W. 71st St., (773) 783-5772 | 52 | non-operable windows, air-conditioning, brick building | 25 | 69 | 44 | 69 | 44 | 70 | 45 | No | None |
| 14P | First Greater Bethlehem Missionary Baptist Church, 7814 S Lowe Ave. | 52 | non-operable windows, window unit air-conditioning, brick building | 25 | 58 | 33 | 57 | 32 | 57 | 32 | No | None |
| 14Q | Mt. Hermon Missionary Baptist Church, 7848 S Normal Ave., (773) 874-3510 | 52 | 2 buildings. The sanctuary has non-operable windows, air-conditioning, and a wood frame. The building closer to the tracks, has operable windows, air-conditioning, and is brick. | 10 | 52 | 42 | 52 | 42 | 53 | 43 | No | None |
| 14R | Pleasant Hill Missionary Baptist Church, 7950 S Normal Ave., (773) 994-4227 | 52 | non-operable windows, air-conditioning, wood frame building | 20 | 51 | 31 | 50 | 30 | 53 | 33 | No | None |
| 15D | Simeon Career Academy, 8235 S. Vincennes Avenue, (773) 535-3200 | 52 | operable windows, air-conditioning, brick building | 10 | 52 | 42 | 53 | 43 | 55 | 45 | No | None |
| 17D | Beacon Light Baptist Church, 8803 S. Harvard Ave., (773) 488-6266 | 52 | operable windows, no visible air-conditioning, brick building | 10 | 63 | 53 | 66 | 56 | 62 | 52 | Yes | Impact |
| 19X | Trinity United Church of Christ., 421 West 95th St., (773) 962-5656 | 52 | operable windows, air-conditioning, brick building | 10 | 79 | 69 | 79 | 69 | 81 | 71 | Yes | Impact |
| 19Y | The Banner School, 9538 S. Harvard Ave., (773) 568-8115 | 52 | operable windows, air-conditioning, concrete building | 10 | 76 | 66 | 76 | 66 | 79 | 69 | Yes | Impact |
| 19Z | St. Thaddeus Catholic Church, 9540 S. Harvard Ave., (773) 568-7077 | 52 | non-operable windows, air-conditioning, brick building | 25 | 77 | 52 | 77 | 52 | 80 | 55 | Yes | Impact |

Notes: [1] Noise reduction factors for each receptor were determined from site visits and FHWA factors in Table 5-1 of the CREATE Methodolgy.

[2] Exterior rail noise predicted with the CREATE version of the FTA spreadsheet model.

[3] Interior noise levels estimated by subtracting the noise reduction factor from the predicted exterior noise.

[4] A potential impact would occur if the Interior Predicted Build Train Noise would be 51 dBA or greater, or the increase between Existing and Build would be 14 dBA or greater.

**Table E-4 Detailed Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | FTA Impact Level |
| 1E4 | 2 / Ldn | 4 | Residential | 50 | 80 | 80 | 80 | 0 | Moderate: 1-2 dBA Severe: >2 dBA | No Impact |
| 1F4 | 2 / Ldn | 12 | Residential | 50 | 81 | 81 | 81 | 0 | Moderate: 1-2 dBA Severe: >2 dBA | No Impact |
| 1I5 | 2 / Ldn | 2 | Residential | 50 | 72 | 72 | 72 | 0 | Moderate: 2-3 dBA Severe: >3 dBA | No Impact |
| 1M7 | 2 / Ldn | 4 | Residential | 50 | 86 | 86 | 87 | 1 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 1M8 | 2 / Ldn | 6 | Residential | 50 | 80 | 79 | 82 | 2 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 1M11 | 2 / Ldn | 5 | Residential | 50 | 78 | 76 | 80 | 2 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 1M14 | 2 / Ldn | 3 | Residential | 50 | 74 | 73 | 78 | 4 | Moderate: 2-2 dBA Severe: >2 dBA | Severe Impact |
| 1M15 | 2 / Ldn | 7 | Residential | 50 | 76 | 73 | 78 | 2 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 1M18 | 2 / Ldn | 7 | Residential | 50 | 71 | 70 | 74 | 3 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 1M19 | 2 / Ldn | 7 | Residential | 50 | 66 | 66 | 67 | 1 | Moderate: 2-4 dBA Severe: >4 dBA | No Impact |
| 1M20 | 2 / Ldn | 10 | Residential | 50 | 74 | 71 | 77 | 3 | Moderate: 2-2 dBA Severe: >2 dBA | Severe Impact |
| 1M21 | 2 / Ldn | 4 | Residential | 50 | 67 | 66 | 68 | 1 | Moderate: 2-3 dBA Severe: >3 dBA | No Impact |
| 1N1 | 2 / Ldn | 10 | Residential | 50 | 70 | 68 | 72 | 2 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 1N6 | 2 / Ldn | 1 | Residential | 50 | 63 | 61 | 65 | 2 | Moderate: 3-4 dBA Severe: >4 dBA | No Impact |
| 1N7 | 2 / Ldn | 2 | Residential | 50 | 60 | 58 | 61 | 1 | Moderate: 3-5 dBA Severe: >5 dBA | No Impact |
| 1N9 | 2 / Ldn | 4 | Residential | 50 | 85 | 83 | 87 | 2 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 1N10 | 2 / Ldn | 14 | Residential | 50 | 72 | 70 | 74 | 2 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 1N12 | 2 / Ldn | 22 | Residential | 50 | 71 | 69 | 73 | 2 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 1N13 | 2 / Ldn | 7 | Residential | 50 | 67 | 66 | 68 | 1 | Moderate: 2-3 dBA Severe: >3 dBA | No Impact |
| 1O1 | 2 / Ldn | 1 | Residential | 50 | 79 | 75 | 81 | 2 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 1O2 | 2 / Ldn | 2 | Residential | 50 | 74 | 71 | 76 | 2 | Moderate: 2-2 dBA Severe: >2 dBA | Moderate Impact |

**Table E-4 Detailed Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | FTA Impact Level |
| 1O3 | 2 / Ldn | 5 | Residential | 50 | 65 | 63 | 68 | 3 | Moderate: 2-4 dBA Severe: >4 dBA | Moderate Impact |
| 1O4 | 2 / Ldn | 5 | Residential | 50 | 65 | 64 | 66 | 1 | Moderate: 2-4 dBA Severe: >4 dBA | No Impact |
| 1O5 | 2 / Ldn | 6 | Residential | 50 | 75 | 75 | 79 | 4 | Moderate: 1-2 dBA Severe: >2 dBA | Severe Impact |
| 1O6 | 2 / Ldn | 1 | Residential | 50 | 65 | 65 | 68 | 3 | Moderate: 2-4 dBA Severe: >4 dBA | Moderate Impact |
| 1P1 | 2 / Ldn | 12 | Residential | 50 | 75 | 73 | 78 | 3 | Moderate: 1-2 dBA Severe: >2 dBA | Severe Impact |
| 1P2 | 2 / Ldn | 6 | Residential | 50 | 73 | 71 | 75 | 2 | Moderate: 2-2 dBA Severe: >2 dBA | Moderate Impact |
| 1P3 | 2 / Ldn | 4 | Residential | 50 | 71 | 70 | 74 | 3 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 1P4 | 2 / Ldn | 7 | Residential | 50 | 73 | 70 | 75 | 2 | Moderate: 2-2 dBA Severe: >2 dBA | Moderate Impact |
| 1P5 | 2 / Ldn | 3 | Residential | 50 | 79 | 79 | 82 | 3 | Moderate: 1-2 dBA Severe: >2 dBA | Severe Impact |
| 1P6 | 2 / Ldn | 7 | Residential | 50 | 73 | 73 | 76 | 3 | Moderate: 2-2 dBA Severe: >2 dBA | Severe Impact |
| 1Q2 | 2 / Ldn | 9 | Residential | 50 | 62 | 62 | 65 | 3 | Moderate: 3-4 dBA Severe: >4 dBA | Moderate Impact |
| 1Q3 | 2 / Ldn | 8 | Residential | 50 | 61 | 61 | 64 | 3 | Moderate: 3-5 dBA Severe: >5 dBA | Moderate Impact |
| 1Q6 | 2 / Ldn | 12 | Residential | 50 | 70 | 67 | 73 | 3 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 1Q7 | 2 / Ldn | 1 | Residential | 50 | 64 | 64 | 67 | 3 | Moderate: 3-4 dBA Severe: >4 dBA | Moderate Impact |
| 1Q8 | 2 / Ldn | 7 | Residential | 50 | 62 | 62 | 64 | 2 | Moderate: 3-4 dBA Severe: >4 dBA | No Impact |
| 1Q9 | 2 / Ldn | 4 | Residential | 50 | 69 | 69 | 72 | 3 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 1Q11 | 2 / Ldn | 6 | Residential | 50 | 64 | 64 | 65 | 1 | Moderate: 3-4 dBA Severe: >4 dBA | No Impact |
| 1Q12 | 2 / Ldn | 7 | Residential | 50 | 55 | 55 | 57 | 2 | Moderate: 4-7 dBA Severe: >7 dBA | No Impact |
| 1R2 | 2 / Ldn | 12 | Residential | 50 | 57 | 57 | 62 | 5 | Moderate: 4-6 dBA Severe: >6 dBA | Moderate Impact |
| 1U2 | 2 / Ldn | 7 | Residential | 50 | 72 | 72 | 74 | 2 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 1U3 | 2 / Ldn | 12 | Residential | 50 | 71 | 72 | 74 | 3 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |

**Table E-4 Detailed Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | FTA Impact Level |
| 2A | 2 / Ldn | 5 | Residential | 50 | 79 | 79 | 81 | 2 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 2B | 2 / Ldn | 8 | Residential | 50 | 73 | 73 | 75 | 2 | Moderate: 2-2 dBA Severe: >2 dBA | Moderate Impact |
| 2C | 2 / Ldn | 9 | Residential | 50 | 69 | 69 | 71 | 2 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 2D | 2 / Ldn | 7 | Residential | 50 | 87 | 87 | 89 | 2 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 2E | 2 / Ldn | 62 | Residential | 50 | 79 | 79 | 81 | 2 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 2F | 2 / Ldn | 77 | Residential | 50 | 75 | 75 | 77 | 2 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 2G | 2 / Ldn | 38 | Residential | 50 | 70 | 70 | 72 | 2 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 2H | 2 / Ldn | 8 | Residential | 50 | 83 | 83 | 85 | 2 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 2I | 2 / Ldn | 16 | Residential | 50 | 77 | 77 | 78 | 1 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 2J | 2 / Ldn | 26 | Residential | 50 | 71 | 72 | 73 | 2 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 2K | 2 / Ldn | 19 | Residential | 50 | 66 | 67 | 68 | 2 | Moderate: 2-4 dBA Severe: >4 dBA | Moderate Impact |
| 2L | 2 / Ldn | 93 | Residential | 50 | 66 | 67 | 69 | 3 | Moderate: 2-4 dBA Severe: >4 dBA | Moderate Impact |
| 2M | 2 / Ldn | 5 | Residential | 50 | 65 | 66 | 68 | 3 | Moderate: 2-4 dBA Severe: >4 dBA | Moderate Impact |
| 2N | 2 / Ldn | 8 | Residential | 50 | 63 | 64 | 66 | 3 | Moderate: 3-4 dBA Severe: >4 dBA | Moderate Impact |
| 2P | 2 / Ldn | 2 | Residential | 50 | 72 | 73 | 73 | 1 | Moderate: 2-3 dBA Severe: >3 dBA | No Impact |
| 2R | 2 / Ldn | 3 | Residential | 50 | 70 | 71 | 72 | 2 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 3A | 2 / Ldn | 5 | Residential | 51 | 80 | 80 | 82 | 2 | Moderate: 1-2 dBA Severe: >2 dBA | Moderate Impact |
| 3B | 2 / Ldn | 11 | Residential | 51 | 73 | 73 | 75 | 2 | Moderate: 2-2 dBA Severe: >2 dBA | Moderate Impact |
| 3C | 2 / Ldn | 10 | Residential | 51 | 70 | 70 | 72 | 2 | Moderate: 2-3 dBA Severe: >3 dBA | Moderate Impact |
| 3D | 2 / Ldn | 9 | Residential | 51 | 66 | 66 | 68 | 2 | Moderate: 2-4 dBA Severe: >4 dBA | Moderate Impact |
| 3F | 2 / Ldn | 3 | Residential | 51 | 66 | 67 | 69 | 3 | Moderate: 2-4 dBA Severe: >4 dBA | Moderate Impact |

**Table E-4 Detailed Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | FTA Impact Level |
| 3G | 2 / Ldn | 4 | Residential | 51 | 60 | 61 | 64 | 4 | Moderate: 3-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 3H | 2 / Ldn | 6 | Residential | 51 | 58 | 59 | 61 | 3 | Moderate: 3-6 dBA<br>Severe: >6 dBA | Moderate Impact |
| 3M | 2 / Ldn | 33 | Residential | 51 | 61 | 62 | 65 | 4 | Moderate: 3-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 9E | 2 / Ldn | 18 | Residential | 50 | 74 | 75 | 75 | 1 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 10A | 3 / Leq | - | Open Space | 52 | 62 | 63 | 68 | 6 | Moderate: 5-8 dBA<br>Severe: >8 dBA | Moderate Impact |
| 10B | 2 / Ldn | 3 | Residential | 50 | 63 | 64 | 68 | 5 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Severe Impact |
| 10C | 2 / Ldn | 4 | Residential | 50 | 59 | 60 | 64 | 5 | Moderate: 3-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 10D | 2 / Ldn | 11 | Residential | 50 | 57 | 58 | 62 | 5 | Moderate: 4-6 dBA<br>Severe: >6 dBA | Moderate Impact |
| 10E | 2 / Ldn | 31 | Residential | 50 | 70 | 71 | 75 | 5 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Severe Impact |
| 10F | 2 / Ldn | 17 | Residential | 50 | 63 | 64 | 67 | 4 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 10G | 2 / Ldn | 13 | Residential | 50 | 59 | 60 | 63 | 4 | Moderate: 3-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 10H | 2 / Ldn | 15 | Residential | 50 | 56 | 57 | 60 | 4 | Moderate: 4-7 dBA<br>Severe: >7 dBA | Moderate Impact |
| 11B | 2 / Ldn | 35 | Residential | 48 | 63 | 64 | 68 | 5 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Severe Impact |
| 11C | 2 / Ldn | 16 | Residential | 48 | 58 | 59 | 63 | 5 | Moderate: 3-6 dBA<br>Severe: >6 dBA | Moderate Impact |
| 11M | 2 / Ldn | 9 | Residential | 48 | 61 | 64 | 65 | 4 | Moderate: 3-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 11N | 2 / Ldn | 8 | Residential | 48 | 52 | 54 | 57 | 5 | Moderate: 5-9 dBA<br>Severe: >9 dBA | Moderate Impact |
| 11O | 2 / Ldn | 5 | Residential | 48 | 53 | 54 | 63 | 10 | Moderate: 5-8 dBA<br>Severe: >8 dBA | Severe Impact |
| 12C | 2 / Ldn | 90 | Residential | 50 | 65 | 65 | 67 | 2 | Moderate: 2-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 12U | 2 / Ldn | 12 | Residential | 50 | 54 | 54 | 63 | 9 | Moderate: 4-8 dBA<br>Severe: >8 dBA | Severe Impact |
| 13C | 2 / Ldn | 11 | Residential | 53 | 65 | 66 | 69 | 4 | Moderate: 2-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 13D | 2 / Ldn | 17 | Residential | 53 | 58 | 59 | 66 | 8 | Moderate: 3-6 dBA<br>Severe: >6 dBA | Severe Impact |

**Table E-4 Detailed Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | FTA Impact Level |
| 13E | 2 / Ldn | 21 | Residential | 53 | 62 | 62 | 65 | 3 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 14L | 2 / Ldn | 38 | Residential | 50 | 63 | 65 | 69 | 6 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Severe Impact |
| 14M | 2 / Ldn | 20 | Residential | 50 | 56 | 57 | 60 | 4 | Moderate: 4-7 dBA<br>Severe: >7 dBA | Moderate Impact |
| 14N | 2 / Ldn | 11 | Residential | 50 | 53 | 54 | 56 | 3 | Moderate: 5-8 dBA<br>Severe: >8 dBA | No Impact |
| 14W | 2 / Ldn | 20 | Residential | 50 | 51 | 52 | 53 | 2 | Moderate: 6-10 dBA<br>Severe: >10 dBA | No Impact |
| 15A | 2 / Ldn | 13 | Residential | 56 | 66 | 67 | 67 | 1 | Moderate: 2-4 dBA<br>Severe: >4 dBA | No Impact |
| 17B | 2 / Ldn | 36 | Residential | 51 | 57 | 57 | 59 | 2 | Moderate: 4-6 dBA<br>Severe: >6 dBA | No Impact |
| 17C | 2 / Ldn | 20 | Residential | 51 | 64 | 66 | 71 | 7 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Severe Impact |
| 18A | 2 / Ldn | 65 | Residential | 57 | 69 | 71 | 74 | 5 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Severe Impact |
| 18E | 2 / Ldn | 35 | Residential | 57 | 63 | 65 | 67 | 4 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 18F | 2 / Ldn | 27 | Residential | 57 | 58 | 59 | 60 | 2 | Moderate: 3-6 dBA<br>Severe: >6 dBA | No Impact |
| 18G | 2 / Ldn | 21 | Residential | 57 | 58 | 58 | 59 | 1 | Moderate: 3-6 dBA<br>Severe: >6 dBA | No Impact |
| 18H | 2 / Ldn | 3 | Residential | 57 | 63 | 64 | 66 | 3 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 18I | 2 / Ldn | 3 | Residential | 57 | 59 | 60 | 62 | 3 | Moderate: 3-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 19AA | 2 / Ldn | 8 | Residential | 55 | 73 | 72 | 74 | 1 | Moderate: 2-2 dBA<br>Severe: >2 dBA | No Impact |
| 19AC | 2 / Ldn | 8 | Residential | 55 | 70 | 69 | 71 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19AF | 2 / Ldn | 8 | Residential | 55 | 77 | 76 | 79 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19AH | 2 / Ldn | 4 | Residential | 55 | 71 | 70 | 72 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19AK | 2 / Ldn | 6 | Residential | 55 | 69 | 68 | 70 | 1 | Moderate: 2-3 dBA<br>Severe: >3 dBA | No Impact |
| 19AM | 2 / Ldn | 5 | Residential | 55 | 80 | 79 | 81 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19AP | 2 / Ldn | 18 | Residential | 55 | 82 | 81 | 83 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |

**Table E-4 Detailed Noise Assessment - Exterior Sound Levels**

| Receptor | FTA Land Use / Noise Metric | Number of Bldgs. Within Cluster | Existing Land Use | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | | Build Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing Train Noise Exposure | No Build Train Noise Exposure | Build Train Noise Exposure | Increase in Overall Noise Exposure - Build over Existing (dBA) | FTA Allowable Increase (dBA) | FTA Impact Level |
| 19AS | 2 / Ldn | 16 | Residential | 55 | 83 | 82 | 84 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19AX | 2 / Ldn | 10 | Residential | 55 | 78 | 77 | 79 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19BA | 2 / Ldn | 45 | Residential | 55 | 75 | 74 | 77 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19D | 3 / Leq | - | Open Space | 57 | 74 | 74 | 76 | 2 | Moderate: 3-5 dBA<br>Severe: >5 dBA | No Impact |
| 19F | 2 / Ldn | 12 | Residential | 55 | 77 | 76 | 78 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19H | 2 / Ldn | 9 | Residential | 55 | 82 | 81 | 84 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19I | 2 / Ldn | 7 | Residential | 55 | 75 | 74 | 76 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19K | 2 / Ldn | 6 | Residential | 55 | 75 | 74 | 77 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19M | 3 / Leq | - | Open Space | 57 | 82 | 82 | 84 | 2 | Moderate: 2-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 19N | 2 / Ldn | 24 | Residential | 55 | 77 | 76 | 78 | 1 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19Q | 3 / Leq | - | Open Space | 57 | 75 | 75 | 77 | 2 | Moderate: 2-5 dBA<br>Severe: >5 dBA | Moderate Impact |
| 19R | 2 / Ldn | 21 | Residential | 55 | 76 | 75 | 78 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 19U | 3 / Leq | - | Open Space | 57 | 80 | 80 | 82 | 2 | Moderate: 2-5 dBA<br>Severe: >5 dBA | Moderate Impact |

**Table E-5 - Detailed Noise Assessment - Interior Sound Levels**

| Receptor ID | Receptor Name, Location | FHWA Interior Noise Criterion Leq (dBA) | Window Condition and Building Type (i.e., operable or non-operable windows, air-conditioning, masonry or wood frame) | Noise Reduction Factor [1] (dBA) | Exterior Existing Predicted Train Noise [2] Leq (dBA) | Interior Existing Predicted Train Noise [3] $L_{eq}$ (dBA) | Exterior No Build Predicted Train Noise [2] $L_{eq}$ (dBA) | Interior No Build Predicted Train Noise [3] $L_{eq}$ (dBA) | Exterior Build Predicted Train Noise [2] $L_{eq}$ (dBA) | Interior Build Predicted Train Noise [3] $L_{eq}$ (dBA) | Interior Predicted Build Approach or Exceed 52 dBA? | Level of Interior Noise Impact [4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1N11 | Ashburn Community Elementary School, 8300 S. St. Louis Avenue First Floor | 52 | operable windows, no visible air-conditioning, brick building | 10 | 68 | 58 | 69 | 59 | 70 | 60 | Yes | Impact |
| 1N11 | Ashburn Community Elementary School, Second Floor | 52 | operable windows, no visible air-conditioning, brick building | 10 | 68 | 58 | 69 | 59 | 70 | 60 | Yes | Impact |
| 1N11 | Ashburn Community Elementary School, Third Floor | 52 | operable windows, no visible air-conditioning, brick building | 10 | 68 | 58 | 69 | 59 | 70 | 60 | Yes | Impact |
| 6I | God's Way Apostolic Faith Church, 7435 S. Ashland Ave. | 52 | operable windows, air-conditioning on roof, brick bldg | 10 | 64 | 54 | 65 | 55 | 64 | 54 | Yes | Impact |
| 6J | Freedom Temple Church of God in Christ., 1459 W. 74th St. | 52 | operable windows, air-conditioning, concrete building, daycare play area outside | 10 | 62 | 52 | 64 | 54 | 62 | 52 | Yes | Impact |
| 12I | Parker Elementary Community Academy, 6800 South Stewart Ave. & Amandla Elementary Charter School First Floor | 52 | operable windows, no visible air-conditioning, brick building | 10 | 59 | 49 | 59 | 49 | 61 | 51 | Yes | Impact |
| 12I | Parker Elementary Community Academy & Amandla Elementary Charter School Second Floor | 52 | operable windows, no visible air-conditioning, brick building | 10 | 60 | 50 | 60 | 50 | 61 | 51 | Yes | Impact |
| 12I | Parker Elementary Community Academy & Amandla Elementary Charter School Third Floor | 52 | operable windows, no visible air-conditioning, brick building | 10 | 60 | 50 | 60 | 50 | 62 | 52 | Yes | Impact |
| 12I | Parker Elementary Community Academy & Amandla Elementary Charter School Fourth Floor | 52 | operable windows, no visible air-conditioning, brick building | 10 | 61 | 51 | 61 | 51 | 62 | 52 | Yes | Impact |
| 17D | Beacon Light Baptist Church, 8803 S. Harvard Ave. | 52 | operable windows, no visible air-conditioning, brick building | 10 | 60 | 50 | 62 | 52 | 59 | 49 | No | None |
| 19X | Trinity United Church of Christ., 421 West 95th St. First Floor | 52 | operable windows, air-conditioning, brick building | 10 | 79 | 69 | 79 | 69 | 81 | 71 | Yes | Impact |
| 19X | Trinity United Church of Christ., 421 West 95th St. Second Floor | 52 | operable windows, air-conditioning, brick building | 10 | 79 | 69 | 79 | 69 | 81 | 71 | Yes | Impact |
| 19Y | The Banner School, 9538 S. Harvard Ave. | 52 | operable windows, air-conditioning, concrete building | 10 | 76 | 66 | 76 | 66 | 79 | 69 | Yes | Impact |
| 19Z | St. Thaddeus Catholic Church, 9540 S. Harvard Ave. | 52 | non-operable windows, air-conditioning, brick building | 25 | 73 | 48 | 73 | 48 | 76 | 51 | Yes | Impact |

Notes: [1] Noise reduction factors for each receptor were determined from site visits and FHWA factors in Table 5-1 of the CREATE Methodolgy.

[2] Exterior rail noise predicted with the CREATE version of the FTA spreadsheet model.

[3] Interior noise levels estimated by subtracting the noise reduction factor from the predicted exterior noise.

[4] A potential impact would occur if the Interior Predicted Build Train Noise would be 51 dBA or greater, or the increase between Existing and Build would be 14 dBA or greater.

**Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier A)**

| Receptor | 1P5 | 1P6 | 1Q7 | 1Q9 | 1R2 |
|---|---|---|---|---|---|
| Potential Barrier Location | Along right of way, bottom of barrier at ground level | | | | |
| Noise Metric | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 82 dBA | 76 dBA | 67 dBA | 72 dBA | 62 dBA |
| Noise Wall Height | 17 ft (above ground level) | | | | |
| Approximate Noise Wall Length | 3,750 ft | | | | |
| Unit Noise Wall Cost(1) | $37.50/sq-ft | | | | |
| Total Noise Wall Cost | $2,390,625 | | | | |
| Future CREATE Program Train Noise Reduction(2) | 15 dBA | 10 dBA | 11 dBA | 8 dBA | 10 dBA |
| Number of Benefited Receptors(3) | 3 | 7 | 1 | 4 | 12 |
| Cost per Benefited Receptor | $88,542 | | | | |
| FTA Impact Level | Severe | Severe | Moderate | Moderate | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate: 2-2 dBA<br>Severe: >2 dBA | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate: 4-6 dBA<br>Severe: >6 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 3 dBA | 3 dBA | 3 dBA | 3 dBA | 5 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 3 dBA | 2 dBA | 1 dBA | 2 dBA | 2 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold(4) | $30,000 | $30,000 | $5,000 | $10,000 | $10,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes | Yes | Yes | Yes | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?(5) | No | | | | |
| Is Noise Wall Likely to be Implemented? | No | | | | |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37 50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. At R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.
(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.
(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.
(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

## Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier C)

| Receptor | 1U2 | 1U3 |
|---|---|---|
| Potential Barrier Location | Along right of way, bottom of barrier at ground level | |
| Noise Metric | $L_{dn}$ | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 74 dBA | 74 dBA |
| Noise Wall Height | 14 ft (above ground level) | |
| Approximate Noise Wall Length | 1,040 ft | |
| Unit Noise Wall Cost(1) | $25.00/sq-ft | |
| Total Noise Wall Cost | $364,000 | |
| Future CREATE Program Train Noise Reduction(2) | 12 dBA | 6 dBA |
| Number of Benefited Receptors(3) | 7 | 12 |
| Cost per Benefited Receptor | $19,158 | |
| FTA Impact Level | Moderate | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate: 2-3 dBA<br>Severe: >3 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 2 dBA | 3 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 1 dBA | 2 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold(4) | $5,000 | $10,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?(5) | No | |
| Is Noise Wall Likely to be Implemented? | No | |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. At R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.
(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.
(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.
(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

## Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier D)

| Receptor | 2A | 2B | 2C | 2R |
|---|---|---|---|---|
| Potential Barrier Location | Outside of right of way, bottom of barrier on retaining wall/fill | | | |
| Noise Metric | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 81 dBA | 75 dBA | 71 dBA | 72 dBA |
| Noise Wall Height | 19 ft (above retaining wall/fill) | | | |
| Approximate Noise Wall Length | 1,125 ft | | | |
| Unit Noise Wall Cost(1) | $37.50/sq-ft | | | |
| Total Noise Wall Cost | $801,563 | | | |
| Future CREATE Program Train Noise Reduction(2) | 13 dBA | 10 dBA | 8 dBA | 7 dBA |
| Number of Benefited Receptors(3) | 5 | 4 | 4 | 3 |
| Cost per Benefited Receptor | $50,098 | | | |
| FTA Impact Level | Moderate | Moderate | Moderate | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate: 2-2 dBA<br>Severe: >2 dBA | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate: 2-3 dBA<br>Severe: >3 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 2 dBA | 2 dBA | 2 dBA | 2 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 2 dBA | 1 dBA | 1 dBA | 1 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold(4) | $10,000 | $5,000 | $5,000 | $5,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes | Yes | Yes | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?(5) | No | | | |
| Is Noise Wall Likely to be Implemented? | No | | | |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. At R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.

(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.

(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.

(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.

(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

**Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier E)**

| Receptor | 2H | 2I | 2J | 2K | 2N | 3A | 3B | 3C | 3D | 3F | 3G | 3H |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Potential Barrier Location | Outside of right of way, bottom of barrier at ground level | | | | | | | | | | | |
| Noise Metric | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 85 dBA | 78 dBA | 73 dBA | 68 dBA | 66 dBA | 82 dBA | 75 dBA | 72 dBA | 68 dBA | 69 dBA | 64 dBA | 61 dBA |
| Noise Wall Height | 18 ft (above ground level) | | | | | | | | | | | |
| Approximate Noise Wall Length | 1,866 ft | | | | | | | | | | | |
| Unit Noise Wall Cost[(1)] | $37.50/sq-ft | | | | | | | | | | | |
| Total Noise Wall Cost | $1,259,550 | | | | | | | | | | | |
| Future CREATE Program Train Noise Reduction[(2)] | 15 dBA | 12 dBA | 9 dBA | 6 dBA | 6 dBA | 15 dBA | 12 dBA | 9 dBA | 7 dBA | 13 dBA | 11 dBA | 9 dBA |
| Number of Benefited Receptors[(3)] | 8 | 14 | 21 | 9 | 2 | 5 | 11 | 10 | 9 | 3 | 4 | 6 |
| Cost per Benefited Receptor | $12,348.53 | | | | | | | | | | | |
| FTA Impact Level | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 1-2 dBA Severe: >2 dBA | Moderate: 1-2 dBA Severe: >2 dBA | Moderate: 2-3 dBA Severe: >3 dBA | Moderate: 2-4 dBA Severe: >4 dBA | Moderate: 3-4 dBA Severe: >4 dBA | Moderate: 1-2 dBA Severe: >2 dBA | Moderate: 2-2 dBA Severe: >2 dBA | Moderate: 2-3 dBA Severe: >3 dBA | Moderate: 2-4 dBA Severe: >4 dBA | Moderate: 2-4 dBA Severe: >4 dBA | Moderate: 3-5 dBA Severe: >5 dBA | Moderate: 3-6 dBA Severe: >6 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 2 dBA | 1 dBA | 2 dBA | 2 dBA | 3 dBA | 2 dBA | 2 dBA | 2 dBA | 2 dBA | 3 dBA | 4 dBA | 3 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 2 dBA | 1 dBA | 1 dBA | 1 dBA | 1 dBA | 2 dBA | 1 dBA | 1 dBA | 1 dBA | 2 dBA | 2 dBA | 1 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold[(4)] | $10,000 | $5,000 | $5,000 | $5,000 | $5,000 | $10,000 | $5,000 | $5,000 | $5,000 | $10,000 | $10,000 | $5,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?[(5)] | No | | | | | | | | | | | |
| Is Noise Wall Likely to be Implemented? | No | | | | | | | | | | | |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. At R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.
(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.
(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.
(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

## Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier F)

| **Receptor** | **3M** |
|---|---|
| Potential Barrier Location | Along right of way, bottom of barrier at ground level |
| Noise Metric | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 65 dBA |
| Noise Wall Height | 20 ft (above ground level) |
| Approximate Noise Wall Length | 2,010 ft |
| Unit Noise Wall Cost(1) | $37.50/sq-ft |
| Total Noise Wall Cost | $1,507,500 |
| Future CREATE Program Train Noise Reduction(2) | 12 dBA |
| Number of Benefited Receptors(3) | 30 |
| Cost per Benefited Receptor | $50,250 |
| FTA Impact Level | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 3-5 dBA<br>Severe: >5 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 4 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 2 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold(4) | $10,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?(5) | No |
| Is Noise Wall Likely to be Implemented? | No |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. At R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.
(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.
(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.
(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

## Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier G)

| Receptor | 10A (park) | 10B | 10C | 10D | 10E | 10F | 10G | 10H |
|---|---|---|---|---|---|---|---|---|
| Potential Barrier Location | Along right of way, bottom of barrier on retaining wall/fill | | | | | | | |
| Noise Metric | $L_{eq}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 68 dBA | 68 dBA | 64 dBA | 62 dBA | 75 dBA | 67 dBA | 63 dBA | 60 dBA |
| Noise Wall Height | 13 ft (above retaining wall/fill) | | | | | | | |
| Approximate Noise Wall Length | 1,841 ft | | | | | | | |
| Unit Noise Wall Cost[(1)] | $25.00/sq-ft plus $575,856 for civil work | | | | | | | |
| Total Noise Wall Cost | $1,174,181 | | | | | | | |
| Future CREATE Program Train Noise Reduction[(2)] | 7 dBA | 6 dBA | 4 dBA | 4 dBA | 14 dBA | 9 dBA | 8 dBA | 6 dBA |
| Number of Benefited Receptors[(3)] | 1 unit | 3 | 1 | 0 | 27 | 17 | 13 | 1 |
| Cost per Benefited Receptor | $18,938 | | | | | | | |
| FTA Impact Level | Moderate | Severe | Moderate | Moderate | Severe | Moderate | Moderate | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 5-8 dBA Severe: >8 dBA | Moderate: 3-4 dBA Severe: >4 dBA | Moderate: 3-5 dBA Severe: >5 dBA | Moderate: 4-6 dBA Severe: >6 dBA | Moderate: 2-3 dBA Severe: >3 dBA | Moderate: 3-4 dBA Severe: >4 dBA | Moderate: 3-5 dBA Severe: >5 dBA | Moderate: 4-7 dBA Severe: >7 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 6 dBA | 5 dBA | 5 dBA | 5 dBA | 5 dBA | 4 dBA | 4 dBA | 4 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 2 dBA | 3 dBA | 3 dBA | 2 dBA | 4 dBA | 2 dBA | 2 dBA | 1 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold[(4)] | $10,000 | $30,000 | $15,000 | $10,000 | $30,000 | $10,000 | $10,000 | $5,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes | Yes | No | No | Yes | Yes | Yes | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?[(5)] | Yes | | | | | | | |
| Is Noise Wall Likely to be Implemented? | Yes | | | | | | | |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. At R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.

(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.

(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.

(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.

(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

## Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier H)

| Receptor | 11B | 11C |
|---|---|---|
| Potential Barrier Location | Along right of way, bottom of barrier on retaining wall/fill) | |
| Noise Metric | $L_{dn}$ | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 68 dBA | 63 dBA |
| Noise Wall Height | 15 ft (above retaining wall/fill) | |
| Approximate Noise Wall Length | 1,378 ft | |
| Unit Noise Wall Cost[(1)] | $25.00/sq-ft plus $134,100 for civil work | |
| Total Noise Wall Cost | $650,850 | |
| Future CREATE Program Train Noise Reduction[(2)] | 9 dBA | 8 dBA |
| Number of Benefited Receptors[(3)] | 35 | 16 |
| Cost per Benefited Receptor | $12,762 | |
| FTA Impact Level | Severe | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate: 3-6 dBA<br>Severe: >6 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 5 dBA | 5 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 3 dBA | 3 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold[(4)] | $30,000 | $15,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?[(5)] | Yes | |
| Is Noise Wall Likely to be Implemented? | Yes | |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. At R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.

(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.

(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.

(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.

(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

## Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier J)

| Receptor | 13C | 13D | 13E |
|---|---|---|---|
| Potential Barrier Location | Along flyover, adjacent to rail | | |
| Noise Metric | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 69 dBA | 66 dBA | 65 dBA |
| Noise Wall Height | 10 ft (above flyover structure) | | |
| Approximate Noise Wall Length | 1,400 ft | | |
| Unit Noise Wall Cost[(1)] | $25.00/sq-ft plus $2,240,000 of civil work | | |
| Total Noise Wall Cost | $2,590,000 | | |
| Future CREATE Program Train Noise Reduction[(2)] | 1 dBA | 5 dBA | 2 dBA |
| Number of Benefited Receptors[(3)] | 0 | 17 | 0 |
| Cost per Benefited Receptor | $152,353 | | |
| FTA Impact Level | Moderate | Severe | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 2-4 dBA<br>Severe: >4 dBA | Moderate: 3-6 dBA<br>Severe: >6 dBA | Moderate: 3-4 dBA<br>Severe: >4 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 4 dBA | 8 dBA | 3 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 3 dBA | 6 dBA | 1 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold[(4)] | $15,000 | $30,000 | $5,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | No | Yes | No |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?[(5)] | No | | |
| Is Noise Wall Likely to be Implemented? | No | | |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. A R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.
(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.
(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.
(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

## Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier L)

| **Receptor** | **12C** |
|---|---|
| Potential Barrier Location | Along right of way, bottom of barrier on retaining wall |
| Noise Metric | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 67 dBA |
| Noise Wall Height | 12 ft (above retaining wall) |
| Approximate Noise Wall Length | 1,000 ft |
| Unit Noise Wall Cost(1) | $25.00/sq-ft |
| Total Noise Wall Cost | $300,000 |
| Future CREATE Program Train Noise Reduction(2) | 13 dBA |
| Number of Benefited Receptors(3) | 13 |
| Cost per Benefited Receptor | $23,077 |
| FTA Impact Level | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 2-4 dBA<br>Severe: >4 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 2 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 1 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold(4) | $5,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?(5) | No |
| Is Noise Wall Likely to be Implemented? | No |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. At R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.
(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.
(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.
(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

## Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier M)

| Receptor | 14L | 14M |
|---|---|---|
| Potential Barrier Location | Along right of way, bottom of barrier varies between embankment and ground level | |
| Noise Metric | $L_{dn}$ | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 69 dBA | 60 dBA |
| Noise Wall Height | 15 ft (above embankment/ground level) | |
| Approximate Noise Wall Length | 1,970 ft | |
| Unit Noise Wall Cost[(1)] | $25.00/sq-ft plus $352,299 for bridge widening | |
| Total Noise Wall Cost | $1,091,049 | |
| Future CREATE Program Train Noise Reduction[(2)] | 11 dBA | 5 dBA |
| Number of Benefited Receptors[(3)] | 38 | 18 |
| Cost per Benefited Receptor | $19,483 | |
| FTA Impact Level | Severe | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate: 4-7 dBA<br>Severe: >7 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 6 dBA | 4 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 4 dBA | 1 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold[(4)] | $30,000 | $5,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?[(5)] | Yes | |
| Is Noise Wall Likely to be Implemented? | Yes | |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. At R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.
(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.
(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.
(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

## Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier N)

| **Receptor** | **17C** |
|---|---|
| Potential Barrier Location | Along right of way, bottom of barrier at edge of access road embankment |
| Noise Metric | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 71 dBA |
| Noise Wall Height | 15 ft (above embankment) |
| Approximate Noise Wall Length | 1,438 ft |
| Unit Noise Wall Cost(1) | $25.00/sq-ft |
| Total Noise Wall Cost | $539,250 |
| Future CREATE Program Train Noise Reduction(2) | 12 dBA |
| Number of Benefited Receptors(3) | 20 |
| Cost per Benefited Receptor | $26,963 |
| FTA Impact Level | Severe |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 3-4 dBA<br>Severe: >4 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 7 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 5 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold(4) | $30,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?(5) | Yes |
| Is Noise Wall Likely to be Implemented? | Yes |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. At R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.
(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.
(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.
(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

## Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier O)

| **Receptor** | **18A** |
|---|---|
| Potential Barrier Location | At edge of ROW |
| Noise Metric | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 74 dBA |
| Noise Wall Height | 22 ft |
| Approximate Noise Wall Length | 1,853 ft |
| Unit Noise Wall Cost(1) | $37.50/sq-ft plus $496,725 for bridge widening |
| Total Noise Wall Cost | $2,025,450 |
| Future CREATE Program Train Noise Reduction(2) | 13 dBA |
| Number of Benefited Receptors(3) | 57 |
| Cost per Benefited Receptor | $35,534 |
| FTA Impact Level | Severe |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 2-3 dBA<br>Severe: >3 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 5 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 4 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold(4) | $30,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?(5) | No |
| Is Noise Wall Likely to be Implemented? | No |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. At R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.
(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.
(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.
(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

## Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier P)

| Receptor | 18E | 18H | 18I |
|---|---|---|---|
| Potential Barrier Location | At edge of embankment | | |
| Noise Metric | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 67 dBA | 66 dBA | 62 dBA |
| Noise Wall Height | 25 ft | | |
| Approximate Noise Wall Length | 1,254 ft | | |
| Unit Noise Wall Cost[(1)] | $37.50/sq-ft | | |
| Total Noise Wall Cost | $1,175,625 | | |
| Future CREATE Program Train Noise Reduction[(2)] | 8 dBA | n/a | n/a |
| Number of Benefited Receptors[(3)] | 32 | 0 | 0 |
| Cost per Benefited Receptor | $36,738 | | |
| FTA Impact Level | Moderate | Moderate | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate: 3-5 dBA<br>Severe: >5 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 4 dBA | 3 dBA | 3 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 2 dBA | 1 dBA | 1 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold[(4)] | $10,000 | $5,000 | $5,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes | Yes | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?[(5)] | No | | |
| Is Noise Wall Likely to be Implemented? | No | | |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. A R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.

(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.

(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.

(4) For “Moderate” Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for “Noise Level over Allowable” of less than 1 dBA.

(5) Does the average “Reasonable Cost per Benefited Residence" exceed the “Cost per Benefited Receptor”?

## Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier R)

| Receptor | 19AS | 19AX | 19BA |
|---|---|---|---|
| Potential Barrier Location | Along right of way, bottom of barrier at ground level | | |
| Noise Metric | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 84 dBA | 79 dBA | 77 dBA |
| Noise Wall Height | 15 ft (above ground level) | | |
| Approximate Noise Wall Length | 2,251 ft | | |
| Unit Noise Wall Cost[(1)] | $25.00/sq-ft | | |
| Total Noise Wall Cost | $844,125 | | |
| Future CREATE Program Train Noise Reduction[(2)] | 11 dBA | 10 dBA | 11 dBA |
| Number of Benefited Receptors[(3)] | 12 | 10 | 45 |
| Cost per Benefited Receptor | $12,599 | | |
| FTA Impact Level | Moderate | Moderate | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate: 1-2 dBA<br>Severe: >2 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 1 dBA | 1 dBA | 2 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 1 dBA | 1 dBA | 2 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold[(4)] | $5,000 | $5,000 | $10,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes | Yes | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?[(5)] | No | | |
| Is Noise Wall Likely to be Implemented? | No | | |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. A R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.

(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.

(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.

(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.

(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

## Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier S)

| Receptor | 19M (Park) | 19N | 19AP |
|---|---|---|---|
| Potential Barrier Location | Along right of way, bottom of barrier at ground level | | |
| Noise Metric | $L_{eq}$ | $L_{dn}$ | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 84 dBA | 78 dBA | 83 dBA |
| Noise Wall Height | 15 ft (above ground level) | | |
| Approximate Noise Wall Length | 2,055 ft | | |
| Unit Noise Wall Cost[(1)] | $25.00/sq-ft | | |
| Total Noise Wall Cost | $770,625 | | |
| Future CREATE Program Train Noise Reduction[(2)] | 14 dBA | 8 dBA | 10 dBA |
| Number of Benefited Receptors[(3)] | 1 | 24 | 15 |
| Cost per Benefited Receptor | $19,266 | | |
| FTA Impact Level | Moderate | Moderate | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 2-5 dBA<br>Severe: >5 dBA | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate: 1-2 dBA<br>Severe: >2 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 2 dBA | 1 dBA | 1 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 1 dBA | 1 dBA | 1 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold[(4)] | $5,000 | $5,000 | $5,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes | Yes | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?[(5)] | No | | |
| Is Noise Wall Likely to be Implemented? | No | | |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. A R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.
(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.
(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.
(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

## Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier U)

| **Receptor** | **19U (Park)** |
|---|---|
| Potential Barrier Location | Outside of right of way, bottom of barrier at ground level |
| Noise Metric | $L_{eq}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 82 dBA |
| Noise Wall Height | 15 ft (above ground level) |
| Approximate Noise Wall Length | 1,181 ft |
| Unit Noise Wall Cost(1) | $25.00/sq-ft |
| Total Noise Wall Cost | $442,875 |
| Future CREATE Program Train Noise Reduction(2) | 14 dBA |
| Number of Benefited Receptors(3) | 1 |
| Cost per Benefited Receptor | $442,875 |
| FTA Impact Level | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 2-5 dBA<br>Severe: >5 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 2 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 1 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold(4) | $5,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?(5) | No |
| Is Noise Wall Likely to be Implemented? | No |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. At R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.
(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.
(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.
(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

## Table E-6 - Abatement Evaluation - Exterior Noise Levels (Barrier V)

| Receptor | 19Q (Park) | 19R |
|---|---|---|
| Potential Barrier Location | Along right-of-way, bottom of barrier at ground level | |
| Noise Metric | $L_{eq}$ | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 77 dBA | 78 dBA |
| Noise Wall Height | 15 ft (above ground level) | |
| Approximate Noise Wall Length | 1,170 ft | |
| Unit Noise Wall Cost[(1)] | $25.00/sq-ft | |
| Total Noise Wall Cost | $438,750 | |
| Future CREATE Program Train Noise Reduction[(2)] | 11 dBA | 14 dBA |
| Number of Benefited Receptors[(3)] | 1 | 21 |
| Cost per Benefited Receptor | $19,943 | |
| FTA Impact Level | Moderate | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 2-5 dBA<br>Severe: >5 dBA | Moderate: 1-2 dBA<br>Severe: >2 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 2 dBA | 2 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 1 dBA | 2 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold[(4)] | $5,000 | $10,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?[(5)] | No | |
| Is Noise Wall Likely to be Implemented? | No | |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. At R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.

(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.

(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.

(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.

(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

**Table E-7 - Abatement Evaluation - Interior Noise Levels (Barrier K)**

| Receptor | 12I Parker School First Floor | 12I Parker School Second Floor | 12I Parker School Third Floor | 12I Parker School Fourth Floor |
|---|---|---|---|---|
| Potential Barrier Location | Along right of way, bottom of barrier at ground level | | | |
| Noise Metric | $L_{eq}$ | $L_{eq}$ | $L_{eq}$ | $L_{eq}$ |
| Noise Wall Height | 15 ft (above ground level) | 20 ft (above ground level) | 26 ft (above ground level) | 32 ft (above ground level) |
| Approximate Noise Wall Length | 800 ft | | | |
| Unit Noise Wall Cost(1) | $25.00/sq-ft | $37.50/sq-ft | $37.50/sq-ft | $50.00/sq-ft |
| Total Noise Wall Cost | $300,000 | $600,000 | $780,000 | $1,280,000 |
| CREATE Program Train Noise Reduction with Noise Wall(2) | 6 dBA<br>At first floor | 6 dBA<br>At second floor | 5 dBA<br>At third floor | 6 dBA<br>At fourth floor |
| Predicted Interior Build Scenario CREATE Program Train Noise (Without Barrier) | 51 dBA | 51 dBA | 52 dBA | 52 dBA |
| Predicted Interior Existing Scenario CREATE Program Train Noise | 49 dBA | 50 dBA | 50 dBA | 51 dBA |
| Number of Decibels Interior Build Scenario Exceeds Existing Scenario, at Floor of Receptor | 2 dBA | 1 dBA | 2 dBA | 1 dBA |
| Reasonable Mitigation Cost per Benefited Unit at Floor of Receptor(3) | $10,000 | $5,000 | $10,000 | $5,000 |
| Number of Benefited Receptors(4) | 1st floor = 7 units | 1st floor = 7 units<br>2nd floor = 4 units<br>Total = 11 units | 1st floor = 7 units<br>2nd floor = 4 units<br>3rd floor = 9 units<br>Total = 20 units | 1st floor = 7 units<br>2nd floor = 4 units<br>3rd floor = 9 units<br>4th floor = 7 units<br>Total = 27 units |
| Reasonable Mitigation Cost per Floor | 1st: 7*10,000 = $70,000 | 1st: 7*10,000 = $70,000<br>2nd: 4*5,000 = $20,000 | 1st: 7*10,000 = $70,000<br>2nd: 4*5,000 = $20,000<br>3rd: 9*10,000 = $90,000 | 1st: 7*10,000 = $70,000<br>2nd: 4*5,000 = $20,000<br>3rd: 9*10,000 = $90,000<br>4th: 7*5,000 = $35,000 |
| Total Reasonable Mitigation Cost | $70,000 | $90,000 | $180,000 | $215,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes | Yes | Yes | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?(5) | No | No | No | No |
| Is Noise Wall Likely to be Implemented? | No | No | No | No |

(1) Noise-wall costs based on $25 00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50 00 per square foot up to 45 feet tall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in interior CREATE Program train noise.
(3) For interior impacts, noise walls must not exceed a cost of $5,000 per benefited receptor for each decibel exceeding the Existing Scenario CREATE Program Train Noise, up to a total limit of $30,000 per benefited receptor.
(4) Benefited Units are units facing the tracks that would receive a noise reduction of at least 5 dBA in CREATE Program train noise.
(5) Does "Total Reasonable Mitigation Cost" exceed the "Total Noise Wall Cost"?

## Table E-7 - Abatement Evaluation - Interior Noise Levels (Barrier Q)

| **Receptor** | **19X (Church)** |
|---|---|
| Potential Barrier Location | Along right of way, bottom of barrier at ground level |
| Noise Metric | $L_{eq}$ |
| Noise Wall Height | 15 ft (above ground level) |
| Approximate Noise Wall Length | 689 ft |
| Unit Noise Wall Cost(1) | $25.00/sq-ft |
| Total Noise Wall Cost | $258,375 |
| CREATE Program Train Noise Reduction with Noise Wall(2) | 12 dBA |
| Predicted Interior Build Scenario CREATE Program Train Noise (Without Barrier) | 71 dBA |
| Predicted Interior Existing Scenario CREATE Program Train Noise | 69 dBA |
| Number of Decibels Interior Build Scenario Exceeds Existing Scenario, at Floor of Receptor | 2 dBA |
| Reasonable Mitigation Cost per Benefited Unit at Floor of Receptor(3) | $10,000 |
| Number of Benefited Receptors(4) | 1 church |
| Reasonable Mitigation Cost per Floor | $10,000 |
| Total Reasonable Mitigation Cost | $10,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?(5) | No |
| Is Noise Wall Likely to be Implemented? | No |

(1) Noise-wall costs based on $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in interior CREATE Program train noise.
(3) For interior impacts, noise walls must not exceed a cost of $5,000 per benefited receptor for each decibel exceeding the Existing Scenario CREATE Program Train Noise, up to a total limit of $30,000 per benefited receptor.
(4) Benefited Units are units facing the tracks that would receive a noise reduction of at least 5 dBA in CREATE Program train noise.
(5) Does "Total Reasonable Mitigation Cost" exceed the "Total Noise Wall Cost"?

## Table E-7 - Abatement Evaluation - Interior Noise Levels (Barrier W)

| **Receptor** | **6I** | **6J** |
|---|---|---|
| Potential Barrier Location | Along right of way, at edge of embankment | |
| Noise Metric | $L_{eq}$ | $L_{eq}$ |
| Noise Wall Height | 15 ft (above embankment) | |
| Approximate Noise Wall Length | 1,264 ft | |
| Unit Noise Wall Cost[(1)] | $25.00/sq-ft plus $335,585 for civil work | |
| Total Noise Wall Cost | $809,585 | |
| CREATE Program Train Noise Reduction with Noise Wall[(2)] | 11 dBA | 10 dBA |
| Predicted Interior Build Scenario CREATE Program Train Noise (Without Barrier) | 54 dBA | 52 dBA |
| Predicted Interior Existing Scenario CREATE Program Train Noise | 54 dBA | 52 dBA |
| Number of Decibels Interior Build Scenario Exceeds Existing Scenario, at Floor of Receptor | 0 dBA | 0 dBA |
| Reasonable Mitigation Cost per Benefited Unit at Floor of Receptor[(3)] | $0 | $0 |
| Number of Benefited Receptors[(4)] | 1 church | 1 church |
| Reasonable Mitigation Cost per Floor | $0 | $0 |
| Total Reasonable Mitigation Cost | $0 | |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?[(5)] | No | |
| Is Noise Wall Likely to be Implemented? | No | |

(1) Noise-wall costs based on $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in interior CREATE Program train noise.
(3) For interior impacts, noise walls must not exceed a cost of $5,000 per benefited receptor for each decibel exceeding the Existing Scenario CREATE Program Train Noise, up to a total limit of $30,000 per benefited receptor.
(4) Benefited Units are units facing the tracks that would receive a noise reduction of at least 5 dBA in CREATE Program train noise.
(5) Does "Total Reasonable Mitigation Cost" exceed the "Total Noise Wall Cost"?

**Table E-8 - Abatement Evaluation - Exterior and Interior Impact Combination (Barrier T)**

| Receptor | 19F | 19H | 19I | 19K | 19Y (Banner School) | 19Z (St. Thaddeus Catholic Church) | 19AM | 19AF |
|---|---|---|---|---|---|---|---|---|
| Receptor Type | Exterior | Exterior | Exterior | Exterior | Interior | Interior | Exterior | Exterior |
| Potential Barrier Location | Along right of way, bottom of barrier at ground level | | | | | | | |
| Noise Metric | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{eq}$ | $L_{eq}$ | $L_{dn}$ | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 78 dBA | 84 dBA | 76 dBA | 77 dBA | N/A | N/A | 81 dBA | 79 dBA |
| Interior CREATE Build Train Noise Level | N/A | N/A | N/A | N/A | 69 dBA | 51 dBA | N/A | N/A |
| Noise Wall Height | 15 ft (above ground level) | | | | | | | |
| Approximate Noise Wall Length | 2,125 ft | | | | | | | |
| Unit Noise Wall Cost[1] | $25.00/sq-ft | | | | | | | |
| Total Noise Wall Cost | $796,875 | | | | | | | |
| Future CREATE Program Train Noise Reduction[2] | 9 dBA | 13 dBA | 9 dBA | 9 dBA | 10 dBA | 10 dBA | 12 dBA | 13 dBA |
| Number of Benefited Receptors[3] | 12 | 4 | 1 | 6 | 10 classrooms | 1 church | 5 | 5 |
| Cost per Benefited Receptor | $18,111 | | | | | | | |
| FTA Impact Level | Moderate | Moderate | Moderate | Moderate | Interior Impact | Interior Impact | Moderate | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 1-2 dBA Severe: >2 dBA | Moderate: 1-2 dBA Severe: >2 dBA | Moderate: 1-2 dBA Severe: >2 dBA | Moderate: 1-2 dBA Severe: >2 dBA | N/A | N/A | Moderate: 1-2 dBA Severe: >2 dBA | Moderate: 1-2 dBA Severe: >2 dBA |
| Predicted Increase in Noise Exposure (Build over Existing) | 1 dBA | 2 dBA | 1 dBA | 2 dBA | 3 dBA | 3 dBA | 1 dBA | 2 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 1 dBA | 2 dBA | 1 dBA | 2 dBA | N/A | N/A | 1 dBA | 2 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold[4] | $5,000 | $10,000 | $5,000 | $10,000 | $15,000 | $15,000 | $5,000 | $10,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?[5] | No | | | | | | | |
| Is Noise Wall Likely to be Implemented? | No | | | | | | | |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. At R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.
(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.
(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.
(5) Does the average "Reasonable Cost per Benefited Residence" exceed the "Cost per Benefited Receptor"?

Table E-9 - Construction Noise - General Assessment - Exterior Sound Levels

| Receptor ID | FTA Land Use / Noise Metric | No. of Dwelling Units within Cluster | Existing Land Use | Average of Distance Offset from Existing Alignment to Temporary Tracks, feet | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | Construction Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Existing Train Noise Exposure | Construction Train Noise Exposure | Increase in Overall Noise Exposure - Construction over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 4A | 3 / Leq | - | School | -86 | 52 | 68 | 70 | 2 | Moderate 4-6 dBA Severe >6 dBA | No |
| 4B | 2 / Ldn | 36 | Residential | -93 | 50 | 62 | 62 | 0 | Moderate 3-4 dBA Severe >4 dBA | No |
| 5A | 2 / Ldn | 31 | Residential | +99 | 48 | 77 | 74 | -3 | Moderate 1-2 dBA Severe >2 dBA | No |
| 5AA | 2 / Ldn | 42 | Residential | +99 | 48 | 65 | 64 | -1 | Moderate 2-4 dBA Severe >4 dBA | No |
| 5AB | 2 / Ldn | 79 | Residential | +99 | 48 | 61 | 61 | 0 | Moderate 3-5 dBA Severe >5 dBA | No |
| 5AC | 2 / Ldn | 44 | Residential | +91 | 48 | 68 | 67 | -1 | Moderate 2-3 dBA Severe >3 dBA | No |
| 5AD | 2 / Ldn | 118 | Residential | +99 | 48 | 65 | 64 | -1 | Moderate 2-4 dBA Severe >4 dBA | No |
| 5AE | 2 / Ldn | 51 | Residential | +67 | 48 | 64 | 64 | 0 | Moderate 3-4 dBA Severe >4 dBA | No |
| 5AF | 2 / Ldn | 65 | Residential | +67 | 48 | 61 | 61 | 0 | Moderate 3-5 dBA Severe >5 dBA | No |
| 5AG | 2 / Ldn | 24 | Residential | -99 | 48 | 64 | 65 | 1 | Moderate 3-4 dBA Severe >4 dBA | No |
| 5AH | 2 / Ldn | 36 | Residential | -99 | 48 | 60 | 61 | 1 | Moderate 3-5 dBA Severe >5 dBA | No |
| 5AI | 2 / Ldn | 25 | Residential | -99 | 48 | 67 | 68 | 1 | Moderate 2-3 dBA Severe >3 dBA | No |
| 5AJ | 2 / Ldn | 40 | Residential | -99 | 48 | 63 | 64 | 1 | Moderate 3-4 dBA Severe >4 dBA | No |
| 5B | 2 / Ldn | 42 | Residential | +99 | 48 | 69 | 67 | -2 | Moderate 2-3 dBA Severe >3 dBA | No |
| 5C | 2 / Ldn | 12 | Residential | +67 | 48 | 73 | 70 | -3 | Moderate 2-2 dBA Severe >2 dBA | No |
| 5D | 2 / Ldn | 47 | Residential | +67 | 48 | 73 | 71 | -2 | Moderate 2-2 dBA Severe >2 dBA | No |
| 5E | 2 / Ldn | 41 | Residential | +67 | 48 | 68 | 67 | -1 | Moderate 2-3 dBA Severe >3 dBA | No |
| 5F | 2 / Ldn | 11 | Residential | -99 | 48 | 78 | 83 | 5 | Moderate 1-2 dBA Severe >2 dBA | Severe Impact |
| 5G | 2 / Ldn | 15 | Residential | -99 | 48 | 70 | 73 | 3 | Moderate 2-3 dBA Severe >3 dBA | Moderate Impact |
| 5H | 2 / Ldn | 13 | Residential | -99 | 48 | 67 | 69 | 2 | Moderate 2-3 dBA Severe >3 dBA | Moderate Impact |
| 5I | 2 / Ldn | 33 | Residential | -67 | 48 | 72 | 73 | 1 | Moderate 2-3 dBA Severe >3 dBA | No |
| 5J | 2 / Ldn | 29 | Residential | -67 | 48 | 66 | 67 | 1 | Moderate 2-4 dBA Severe >4 dBA | No |
| 5L | 2 / Ldn | 46 | Residential | +99 | 48 | 79 | 77 | -2 | Moderate 1-2 dBA Severe >2 dBA | No |
| 5M | 2 / Ldn | 40 | Residential | +99 | 48 | 72 | 71 | -1 | Moderate 2-3 dBA Severe >3 dBA | No |
| 5N | 2 / Ldn | 13 | Residential | -99 | 48 | 80 | 84 | 4 | Moderate 1-2 dBA Severe >2 dBA | Severe Impact |
| 5O | 2 / Ldn | 14 | Residential | -99 | 48 | 74 | 76 | 2 | Moderate 2-2 dBA Severe >2 dBA | Moderate Impact |
| 5P | 2 / Ldn | 17 | Residential | -99 | 48 | 70 | 72 | 2 | Moderate 2-3 dBA Severe >3 dBA | Moderate Impact |
| 5Q | 2 / Ldn | 16 | Residential | -91 | 48 | 75 | 77 | 2 | Moderate 1-2 dBA Severe >2 dBA | Moderate Impact |
| 5R | 2 / Ldn | 19 | Residential | -91 | 48 | 69 | 70 | 1 | Moderate 2-3 dBA Severe >3 dBA | No |
| 5S | 2 / Ldn | 27 | Residential | +55 | 48 | 73 | 69 | -4 | Moderate 2-2 dBA Severe >2 dBA | No |
| 5T | 2 / Ldn | 30 | Residential | +55 | 48 | 60 | 59 | -1 | Moderate 3-5 dBA Severe >5 dBA | No |
| 5U | 2 / Ldn | 27 | Residential | +55 | 48 | 56 | 55 | -1 | Moderate 4-7 dBA Severe >7 dBA | No |
| 5V | 2 / Ldn | 34 | Residential | -54 | 48 | 61 | 62 | 1 | Moderate 3-5 dBA Severe >5 dBA | No |
| 5W | 2 / Ldn | 39 | Residential | -67 | 48 | 55 | 56 | 1 | Moderate 4-7 dBA Severe >7 dBA | No |
| 5X | 2 / Ldn | 78 | Residential | -67 | 48 | 53 | 53 | 0 | Moderate 5-8 dBA Severe >8 dBA | No |
| 5Y | 2 / Ldn | 64 | Residential | -67 | 48 | 63 | 63 | 0 | Moderate 3-4 dBA Severe >4 dBA | No |
| 5Z | 2 / Ldn | 41 | Residential | -91 | 48 | 66 | 67 | 1 | Moderate 2-4 dBA Severe >4 dBA | No |
| 6A | 2 / Ldn | 17 | Residential | -83 | 48 | 75 | 78 | 3 | Moderate 1-2 dBA Severe >2 dBA | Severe Impact |
| 6A-2[1] | 2 / Ldn | 12 | Residential | -83 | 48 | 72 | 76 | 4 | Moderate 2-3 dBA Severe >3 dBA | Severe Impact |
| 6B | 2 / Ldn | 22 | Residential | -83 | 48 | 66 | 67 | 1 | Moderate 2-4 dBA Severe >4 dBA | No |
| 6C | 2 / Ldn | 13 | Residential | -76 | 48 | 63 | 63 | 0 | Moderate 3-4 dBA Severe >4 dBA | No |
| 7A | 2 / Ldn | 45 | Residential | -40 | 51 | 66 | 67 | 1 | Moderate 2-4 dBA Severe >4 dBA | No |
| 7B | 2 / Ldn | 26 | Residential | -45 | 51 | 57 | 58 | 1 | Moderate 4-6 dBA Severe >6 dBA | No |
| 7C | 2 / Ldn | 44 | Residential | -50 | 51 | 55 | 55 | 0 | Moderate 4-7 dBA Severe >7 dBA | No |

[1]An additional receptor 6A-2 was added to better predict the effects of Temporary Barrier 2. This receptor is only included in the temporary barrier analysis.

**Table E-10 - Construction Noise - General Assessment - Interior Sound Levels**

| Receptor ID | Receptor Name, Location | FHWA Interior Noise Criterion Leq (dBA) | Window Condition and Building Type (i.e., operable or non-operable windows, air-conditioning, masonry or wood frame) | Noise Reduction Factor [1] (dBA) | Exterior Existing Predicted Train Noise [2] Leq (dBA) | Interior Existing Predicted Train Noise [3] $L_{eq}$ (dBA) | Exterior Construction Predicted Train Noise [2] $L_{eq}$ (dBA) | Interior Construction Predicted Train Noise [3] $L_{eq}$ (dBA) | Interior Predicted Build Approach or Exceed 52 dBA? | Level of Interior Noise Impact [4] |
|---|---|---|---|---|---|---|---|---|---|---|
| 5K | New St Paul C.O.G.I.C, 2113 West Columbus Ave. | 52 | operable windows, no visibile air conditioning, brick building | 10 | 52 | 42 | 57 | 47 | No | None |
| 7O | First Church of Love and Faith, 2140 W 79th St., (773) 224-6800 | 52 | non-operable windows, air-conditioning on roof, brick bldg | 25 | 59 | 34 | 62 | 37 | No | None |

Notes: [1] Noise reduction factors for each receptor were determined from site visits and FHWA factors in Table 5-1 of the CREATE Methodolgy.

[2] Exterior rail noise predicted with the CREATE version of the FTA spreadsheet model.

[3] Interior noise levels estimated by subtracting the noise reduction factor from the predicted exterior noise.

[4] A potential impact would occur if the Interior Predicted Construction Train Noise would be 51 dBA or greater, or the increase between Existing and Build would be 14 dBA or greater.

**Table E-11 - Construction Noise - Detailed Assessment - Exterior Sound Levels**

| Receptor ID | FTA Land Use / Noise Metric | No. of Dwelling Units within Cluster | Existing Land Use | Average of Distance Offset from Existing Alignment to Temporary Tracks, feet | Background Noise Level, dBA | Predicted Exterior Noise Levels, dBA | | Construction Scenario Impacts | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Existing Train Noise Exposure | Construction Train Noise Exposure | Increase in Overall Noise Exposure - Construction over Existing (dBA) | FTA Allowable Increase (dBA) | Impact Under FTA Criteria |
| 5F | 2 / Ldn | 11 | Residential | -99 | 48 | 73 | 80 | 7 | Moderate: 2-2 dBA<br>Severe: >2 dBA | Severe Impact |
| 5G | 2 / Ldn | 15 | Residential | -99 | 48 | 65 | 68 | 3 | Moderate: 2-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 5H | 2 / Ldn | 13 | Residential | -99 | 48 | 61 | 63 | 2 | Moderate: 3-5 dBA<br>Severe: >5 dBA | None |
| 5N | 2 / Ldn | 13 | Residential | -99 | 48 | 75 | 81 | 6 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Severe Impact |
| 5O | 2 / Ldn | 14 | Residential | -99 | 48 | 68 | 72 | 4 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Severe Impact |
| 5P | 2 / Ldn | 17 | Residential | -99 | 48 | 64 | 67 | 3 | Moderate: 3-4 dBA<br>Severe: >4 dBA | Moderate Impact |
| 5Q | 2 / Ldn | 16 | Residential | -91 | 48 | 75 | 77 | 2 | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate Impact |
| 6A | 2 / Ldn | 17 | Residential | -83 | 48 | 72 | 74 | 2 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate Impact |
| 6A-2[1] | 2 / Ldn | 12 | Residential | -83 | 48 | 67 | 69 | 2 | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate Impact |

[1]An additional receptor, 6A-2, was added to better predict the effects of Temporary Barrier 2. This receptor is only included in the temporary barrier analysis.

**Table E-12 - Abatement Evaluation - Exterior Noise Levels (Temporary Barrier-1)**

| Receptor | 5F | 5G | 5N | 5O | 5P |
|---|---|---|---|---|---|
| Potential Barrier Location | Within ROW | | | | |
| Noise Metric | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 80 dBA | 68 dBA | 81 dBA | 72 dBA | 67 dBA |
| Noise Wall Height | 18 ft (above ground level) | | | | |
| Approximate Noise Wall Length | 1,490 ft | | | | |
| Unit Noise Wall Cost(1) | $37.50/sq-ft | | | | |
| Total Noise Wall Cost | $1,005,750 | | | | |
| Future CREATE Program Train Noise Reduction(2) | 12 dBA | 7 dBA | 12 dBA | 7 dBA | 5 dBA |
| Number of Benefited Receptors(3) | 11 | 14 | 6 | 8 | 5 |
| Cost per Benefited Receptor | $22,858 | | | | |
| FTA Impact Level | Severe | Moderate | Severe | Severe | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 2-2 dBA<br>Severe: >2 dBA | Moderate: 2-4 dBA<br>Severe: >4 dBA | Moderate: 1-2 dBA<br>Severe: >2 dBA | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate: 3-4 dBA<br>Severe: >4 dBA |
| Predicted Increase in Noise Exposure (Construction over Existing) | 7 dBA | 3 dBA | 6 dBA | 4 dBA | 3 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 6 dBA | 2 dBA | 6 dBA | 3 dBA | 1 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold(4) | $30,000 | $10,000 | $30,000 | $30,000 | $5,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | Yes | Yes | Yes | Yes | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?(5) | No | | | | |
| Is Noise Wall Likely to be Implemented? | No | | | | |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. At R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.
(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.
(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.
(5) Does "Reasonable Cost per Benefited Value" exceed the "Cost per Benefited Receptor"?

**Table E-12 - Abatement Evaluation - Exterior Noise Levels (Temporary Barrier-2)**

| **Receptor** | **6A** | **6A-2** |
|---|---|---|
| Potential Barrier Location | Within ROW | |
| Noise Metric | $L_{dn}$ | $L_{dn}$ |
| Overall Build Scenario Noise Level Without Barrier (Future CREATE Program Noise + Background) | 74 dBA | 69 dBA |
| Noise Wall Height | 18 ft (above fill) | |
| Approximate Noise Wall Length | 855 ft | |
| Unit Noise Wall Cost(1) | $37.50/sq-ft | |
| Total Noise Wall Cost | $577,125 | |
| Future CREATE Program Train Noise Reduction(2) | 3 dBA | 10 dBA |
| Number of Benefited Receptors(3) | 2 | 12 |
| Cost per Benefited Receptor | $48,094 | |
| FTA Impact Level | Moderate | Moderate |
| Allowable Noise Level Increase Under FTA Criteria (Moderate Impact Threshold) | Moderate: 2-3 dBA<br>Severe: >3 dBA | Moderate: 2-3 dBA<br>Severe: >3 dBA |
| Predicted Increase in Noise Exposure (Construction over Existing) | 2 dBA | 2 dBA |
| Predicted Noise Increase over Moderate Impact Threshold | 1 dBA | 1 dBA |
| Reasonable Cost Level per Benefited Residence for Decibels Exceeding Moderate Impact Threshold(4) | $5,000 | $5,000 |
| Does Noise Wall Achieve Noise Reduction Goal? (minimum 5-dBA reduction) | No | Yes |
| Does Noise Wall Achieve the Policy Economic Reasonability Value?(5) | No | |
| Is Noise Wall Likely to be Implemented? | No | |

(1) Noise wall costs are based on a $25.00 per square foot unit cost for walls up to 15 feet tall; $37.50 per square foot up to 30 feet tall, and $50.00 per square foot up to 45 feet tall. At R2, the noise wall would be on top of the proposed retaining wall, and the height of the retaining wall was deducted from the overall height of the noise wall to determine the total cost of the noise wall.
(2) Noise reduction goal of a feasible reduction of 5 dBA or more in future CREATE Program train noise.
(3) Benefited receptor assumed to receive a noise reduction of at least 5 dBA.
(4) For "Moderate" Impacts, an upper limit of $5,000 per dwelling for each decibel exceeding the impact threshold, up to a limit of $30,000 per dwelling. Minimum of $5,000 per dwelling for "Noise Level over Allowable" of less than 1 dBA.
(5) Does "Reasonable Cost per Benefited Value" exceed the "Cost per Benefited Receptor"?

**Table E-13 – $L_{max}$ Sound Levels**

| Receptor | Existing | | | | No Build | | | | Build | | | | Increase of Lmax between Build and Existing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $L_{max}$ Locos | $L_{max}$ Railcars | $L_{max}$ Horn | $L_{max}$ Train | $L_{max}$ Locos | $L_{max}$ Railcars | $L_{max}$ Horn | $L_{max}$ Train | $L_{max}$ Locos | $L_{max}$ Railcars | $L_{max}$ Horn | $L_{max}$ Train | |
| **1E4** | 90 | 95 | 107 | 107 | 90 | 95 | 107 | 107 | 90 | 95 | 107 | 107 | 0 |
| **1F4** | 90 | 95 | 108 | 108 | 90 | 95 | 108 | 108 | 90 | 95 | 108 | 108 | 0 |
| **1I5** | 86 | 89 | 102 | 102 | 86 | 89 | 102 | 102 | 86 | 89 | 102 | 102 | 0 |
| ***1M7*** | ***90*** | ***96*** | ***109*** | ***109*** | ***90*** | ***96*** | ***109*** | ***109*** | ***90*** | ***96*** | ***109*** | ***109*** | 0 |
| **1M8** | 87 | 91 | 104 | 104 | 87 | 90 | 103 | 103 | 87 | 90 | 103 | 103 | -1 |
| **1M11** | 90 | 94 | 107 | 107 | 89 | 94 | 107 | 107 | 89 | 94 | 107 | 107 | 0 |
| ***1M14*** | ***91*** | ***96*** | ***109*** | ***109*** | ***90*** | ***95*** | ***108*** | ***108*** | ***90*** | ***96*** | ***109*** | ***109*** | 0 |
| **1M15** | 90 | 94 | 107 | 107 | 89 | 93 | 106 | 106 | 89 | 94 | 107 | 107 | 0 |
| **1M18** | 90 | 95 | 108 | 108 | 90 | 95 | 107 | 107 | 90 | 95 | 108 | 108 | 0 |
| **1M19** | 86 | 89 | 102 | 102 | 85 | 88 | 101 | 101 | 86 | 89 | 102 | 102 | 0 |
| **1M20** | 90 | 94 | 107 | 107 | 89 | 94 | 107 | 107 | 89 | 94 | 107 | 107 | 0 |
| **1M21** | 87 | 90 | 103 | 103 | 86 | 90 | 103 | 103 | 87 | 90 | 103 | 103 | 0 |
| **1N1** | 87 | 90 | 103 | 103 | 86 | 90 | 103 | 103 | 87 | 90 | 103 | 103 | 0 |
| **1N6** | 85 | 88 | 101 | 101 | 85 | 88 | 101 | 101 | 85 | 88 | 101 | 101 | 0 |
| **1N7** | 84 | 87 | 100 | 100 | 84 | 87 | 100 | 100 | 84 | 87 | 100 | 100 | 0 |
| ***1N9*** | ***91*** | ***96*** | ***109*** | ***109*** | ***90*** | ***95*** | ***109*** | ***109*** | ***90*** | ***96*** | ***109*** | ***109*** | 0 |
| **1N10** | 89 | 93 | 106 | 106 | 88 | 92 | 105 | 105 | 89 | 93 | 106 | 106 | 0 |
| **1N11** | 79 | 79 | 100 | 100 | 79 | 79 | 100 | 100 | 79 | 79 | 98 | 98 | -2 |
| **1N12** | 89 | 92 | 105 | 105 | 88 | 92 | 105 | 105 | 88 | 92 | 105 | 105 | 0 |
| **1N13** | 87 | 90 | 103 | 103 | 86 | 90 | 103 | 103 | 86 | 90 | 103 | 103 | 0 |
| **1O1** | 90 | 94 | 107 | 107 | 89 | 94 | 107 | 107 | 89 | 94 | 107 | 107 | 0 |
| **1O2** | 89 | 93 | 106 | 106 | 89 | 93 | 106 | 106 | 89 | 93 | 106 | 106 | 0 |
| **1O3** | 87 | 90 | 103 | 103 | 86 | 90 | 103 | 103 | 87 | 90 | 103 | 103 | 0 |
| **1O4** | 86 | 88 | 102 | 102 | 85 | 88 | 101 | 101 | 85 | 88 | 102 | 102 | 0 |
| **1O5** | 85 | 88 | 105 | 105 | 85 | 88 | 105 | 105 | 85 | 89 | 104 | 104 | -1 |
| **1O6** | 81 | 81 | 102 | 102 | 81 | 82 | 102 | 102 | 81 | 82 | 102 | 102 | 0 |
| **1P1** | 89 | 93 | 106 | 106 | 89 | 93 | 106 | 106 | 89 | 93 | 106 | 106 | 0 |
| **1P2** | 89 | 93 | 106 | 106 | 88 | 92 | 105 | 105 | 88 | 92 | 105 | 105 | -1 |
| **1P3** | 89 | 93 | 106 | 106 | 88 | 93 | 106 | 106 | 89 | 93 | 106 | 106 | 0 |
| **1P4** | 90 | 94 | 107 | 107 | 89 | 94 | 107 | 107 | 89 | 94 | 107 | 107 | 0 |
| **1P5** | 86 | 88 | 108 | 108 | 86 | 88 | 108 | 108 | 87 | 89 | 107 | 107 | -1 |
| **1P6** | 83 | 83 | 104 | 104 | 83 | 84 | 104 | 104 | 83 | 84 | 104 | 104 | 0 |
| **1Q2** | 79 | 80 | 99 | 99 | 79 | 80 | 99 | 99 | 79 | 79 | 98 | 98 | -1 |
| **1Q3** | 79 | 79 | 99 | 99 | 79 | 79 | 99 | 99 | 78 | 78 | 99 | 99 | 0 |
| **1Q6** | 89 | 92 | 106 | 106 | 88 | 92 | 105 | 105 | 88 | 92 | 105 | 105 | -1 |
| **1Q7** | 85 | 86 | 100 | 100 | 85 | 85 | 100 | 100 | 85 | 86 | 100 | 100 | 0 |
| **1Q8** | 83 | 83 | 100 | 100 | 83 | 83 | 100 | 100 | 83 | 84 | 99 | 99 | -1 |
| **1Q9** | 82 | 83 | 103 | 103 | 82 | 83 | 103 | 103 | 82 | 83 | 103 | 103 | 0 |
| **1Q11** | 81 | 81 | 102 | 102 | 81 | 81 | 102 | 102 | 81 | 81 | 101 | 101 | -1 |
| **1Q12** | 79 | 79 | 99 | 99 | 79 | 80 | 99 | 99 | 79 | 79 | 98 | 98 | -1 |
| **1R2** | 84 | 85 | 0 | 85 | 84 | 85 | 0 | 85 | 85 | 86 | 0 | 86 | 1 |
| **1U2** | 82 | 85 | 93 | 93 | 82 | 85 | 93 | 93 | 81 | 84 | 94 | 94 | 1 |
| **1U3** | 79 | 83 | 94 | 94 | 79 | 83 | 93 | 93 | 80 | 84 | 94 | 94 | 0 |
| **2A** | 85 | 89 | 100 | 100 | 85 | 88 | 100 | 100 | 85 | 89 | 100 | 100 | 0 |
| **2B** | 83 | 86 | 100 | 100 | 83 | 86 | 99 | 99 | 84 | 87 | 100 | 100 | 0 |
| **2C** | 82 | 85 | 98 | 98 | 82 | 85 | 98 | 98 | 82 | 85 | 98 | 98 | 0 |
| **2D** | 88 | 93 | 106 | 106 | 88 | 93 | 106 | 106 | 88 | 93 | 106 | 106 | 0 |
| **2E** | 86 | 90 | 103 | 103 | 86 | 90 | 103 | 103 | 86 | 90 | 103 | 103 | 0 |
| **2F** | 84 | 87 | 100 | 100 | 84 | 87 | 100 | 100 | 84 | 87 | 100 | 100 | 0 |
| **2G** | 81 | 85 | 97 | 97 | 81 | 85 | 97 | 97 | 81 | 85 | 97 | 97 | 0 |
| **2H** | 87 | 91 | 104 | 104 | 87 | 91 | 104 | 104 | 87 | 92 | 105 | 105 | 1 |
| **2I** | 86 | 90 | 103 | 103 | 86 | 90 | 103 | 103 | 86 | 90 | 103 | 103 | 0 |
| **2J** | 84 | 87 | 100 | 100 | 84 | 87 | 100 | 100 | 84 | 87 | 100 | 100 | 0 |
| **2K** | 81 | 84 | 97 | 97 | 81 | 85 | 97 | 97 | 81 | 85 | 97 | 97 | 0 |
| **2L** | 80 | 83 | 96 | 96 | 80 | 83 | 96 | 96 | 80 | 83 | 96 | 96 | 0 |

**Table E-13 – $L_{max}$ Sound Levels**

| Receptor | Existing | | | | No Build | | | | Build | | | | Increase of Lmax between Build and Existing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $L_{max}$ Locos | $L_{max}$ Railcars | $L_{max}$ Horn | $L_{max}$ Train | $L_{max}$ Locos | $L_{max}$ Railcars | $L_{max}$ Horn | $L_{max}$ Train | $L_{max}$ Locos | $L_{max}$ Railcars | $L_{max}$ Horn | $L_{max}$ Train | |
| **2M** | 79 | 83 | 95 | 95 | 79 | 83 | 95 | 95 | 79 | 82 | 95 | 95 | 0 |
| **2N** | 80 | 83 | 96 | 96 | 80 | 83 | 96 | 96 | 80 | 83 | 96 | 96 | 0 |
| **2P** | 85 | 88 | 98 | 98 | 84 | 88 | 98 | 98 | 85 | 88 | 98 | 98 | 0 |
| **2R** | 82 | 85 | 97 | 97 | 82 | 85 | 97 | 97 | 82 | 86 | 97 | 97 | 0 |
| **3A** | 88 | 92 | 102 | 102 | 88 | 92 | 102 | 102 | 88 | 92 | 102 | 102 | 0 |
| **3B** | 85 | 89 | 101 | 101 | 86 | 89 | 101 | 101 | 86 | 89 | 101 | 101 | 0 |
| **3C** | 84 | 87 | 99 | 99 | 84 | 87 | 99 | 99 | 84 | 87 | 99 | 99 | 0 |
| **3D** | 82 | 85 | 97 | 97 | 82 | 85 | 97 | 97 | 82 | 85 | 97 | 97 | 0 |
| **3F** | 85 | 89 | 0 | 89 | 85 | 88 | 0 | 88 | 85 | 88 | 0 | 88 | -1 |
| **3G** | 84 | 87 | 0 | 87 | 84 | 88 | 0 | 88 | 84 | 87 | 0 | 87 | 0 |
| **3H** | 83 | 86 | 0 | 86 | 83 | 86 | 0 | 86 | 83 | 86 | 0 | 86 | 0 |
| **3M** | 82 | 85 | 0 | 85 | 82 | 85 | 0 | 85 | 82 | 85 | 0 | 85 | 0 |
| **6I** | 85 | 88 | 0 | 88 | 84 | 87 | 0 | 87 | 85 | 88 | 0 | 88 | 0 |
| **6J** | 84 | 87 | 0 | 87 | 83 | 87 | 0 | 87 | 84 | 87 | 0 | 87 | 0 |
| **9E** | 86 | 90 | 0 | 90 | 86 | 91 | 0 | 91 | 87 | 92 | 0 | 92 | 2 |
| **10A** | 85 | 89 | 0 | 89 | 85 | 89 | 0 | 89 | 86 | 90 | 0 | 90 | 1 |
| **10B** | 84 | 87 | 0 | 87 | 85 | 88 | 0 | 88 | 85 | 88 | 0 | 88 | 1 |
| **10C** | 82 | 85 | 0 | 85 | 82 | 86 | 0 | 86 | 82 | 86 | 0 | 86 | 1 |
| **10D** | 81 | 84 | 0 | 84 | 81 | 85 | 0 | 85 | 81 | 85 | 0 | 85 | 1 |
| **10E** | 87 | 91 | 0 | 91 | 88 | 92 | 0 | 92 | 90 | 96 | 0 | 96 | 5 |
| **10F** | 84 | 87 | 0 | 87 | 85 | 88 | 0 | 88 | 86 | 89 | 0 | 89 | 2 |
| **10G** | 82 | 86 | 0 | 86 | 83 | 86 | 0 | 86 | 84 | 87 | 0 | 87 | 1 |
| **10H** | 81 | 84 | 0 | 84 | 82 | 85 | 0 | 85 | 82 | 86 | 0 | 86 | 2 |
| **11B** | 84 | 87 | 0 | 87 | 84 | 87 | 0 | 87 | 84 | 87 | 0 | 87 | 0 |
| **11C** | 81 | 84 | 0 | 84 | 81 | 84 | 0 | 84 | 81 | 84 | 0 | 84 | 0 |
| **11M** | 85 | 90 | 0 | 90 | 86 | 91 | 0 | 91 | 87 | 90 | 0 | 90 | 0 |
| **11N** | 82 | 85 | 0 | 85 | 83 | 86 | 0 | 86 | 83 | 87 | 0 | 87 | 2 |
| **11O** | 82 | 85 | 0 | 85 | 83 | 86 | 0 | 86 | 86 | 87 | 0 | 87 | 2 |
| **12C** | 88 | 79 | 0 | 88 | 88 | 79 | 0 | 88 | 87 | 78 | 0 | 87 | -1 |
| **12I** | 86 | 75 | 0 | 86 | 86 | 75 | 0 | 86 | 85 | 75 | 0 | 85 | -1 |
| **12U** | 83 | 82 | 0 | 83 | 83 | 83 | 0 | 83 | 86 | 84 | 0 | 86 | 3 |
| **13C** | 85 | 90 | 0 | 90 | 86 | 91 | 0 | 91 | 86 | 90 | 0 | 90 | 0 |
| **13D** | 83 | 85 | 0 | 85 | 83 | 86 | 0 | 86 | 87 | 86 | 0 | 87 | 2 |
| **13E** | 87 | 84 | 0 | 87 | 87 | 84 | 0 | 87 | 87 | 85 | 0 | 87 | 0 |
| **14L** | 84 | 88 | 0 | 88 | 84 | 88 | 0 | 88 | 86 | 90 | 0 | 90 | 2 |
| **14M** | 81 | 84 | 0 | 84 | 81 | 84 | 0 | 84 | 83 | 87 | 0 | 87 | 3 |
| **14N** | 80 | 83 | 0 | 83 | 80 | 83 | 0 | 83 | 81 | 84 | 0 | 84 | 1 |
| **14W** | 79 | 82 | 0 | 82 | 79 | 82 | 0 | 82 | 80 | 82 | 0 | 82 | 0 |
| **15A** | 88 | 91 | 0 | 91 | 88 | 91 | 0 | 91 | 88 | 92 | 0 | 92 | 1 |
| **17B** | 83 | 87 | 0 | 87 | 83 | 87 | 0 | 87 | 83 | 86 | 0 | 86 | -1 |
| **17C** | 86 | 90 | 0 | 90 | 86 | 89 | 0 | 89 | 88 | 91 | 0 | 91 | 1 |
| **17D** | 87 | 91 | 0 | 91 | 87 | 91 | 0 | 91 | 86 | 90 | 0 | 90 | -1 |
| **18A** | 87 | 90 | 0 | 90 | 87 | 90 | 0 | 90 | 87 | 90 | 0 | 90 | 0 |
| **18E** | 86 | 90 | 0 | 90 | 86 | 89 | 0 | 89 | 86 | 89 | 0 | 89 | -1 |
| **18F** | 84 | 87 | 0 | 87 | 84 | 87 | 0 | 87 | 84 | 87 | 0 | 87 | 0 |
| **18G** | 83 | 87 | 0 | 87 | 83 | 87 | 0 | 87 | 83 | 87 | 0 | 87 | 0 |
| **18H** | 86 | 89 | 0 | 89 | 86 | 89 | 0 | 89 | 86 | 89 | 0 | 89 | 0 |
| **18I** | 85 | 89 | 0 | 89 | 85 | 88 | 0 | 88 | 85 | 88 | 0 | 88 | -1 |
| **19AA** | 87 | 90 | 103 | 103 | 87 | 90 | 104 | 104 | 87 | 90 | 103 | 103 | 0 |
| **19AC** | 86 | 89 | 102 | 102 | 86 | 89 | 102 | 102 | 86 | 89 | 102 | 102 | 0 |
| **19AF** | 89 | 93 | 106 | 106 | 89 | 93 | 106 | 106 | 89 | 93 | 106 | 106 | 0 |
| **19AH** | 86 | 89 | 102 | 102 | 86 | 89 | 102 | 102 | 86 | 89 | 102 | 102 | 0 |
| **19AK** | 85 | 89 | 101 | 101 | 85 | 88 | 101 | 101 | 85 | 88 | 101 | 101 | 0 |
| **19AM** | 89 | 93 | 106 | 106 | 89 | 93 | 106 | 106 | 89 | 93 | 106 | 106 | 0 |
| **19AP** | 87 | 91 | 104 | 104 | 87 | 91 | 104 | 104 | 87 | 91 | 104 | 104 | 0 |

**Table E-13 – $L_{max}$ Sound Levels**

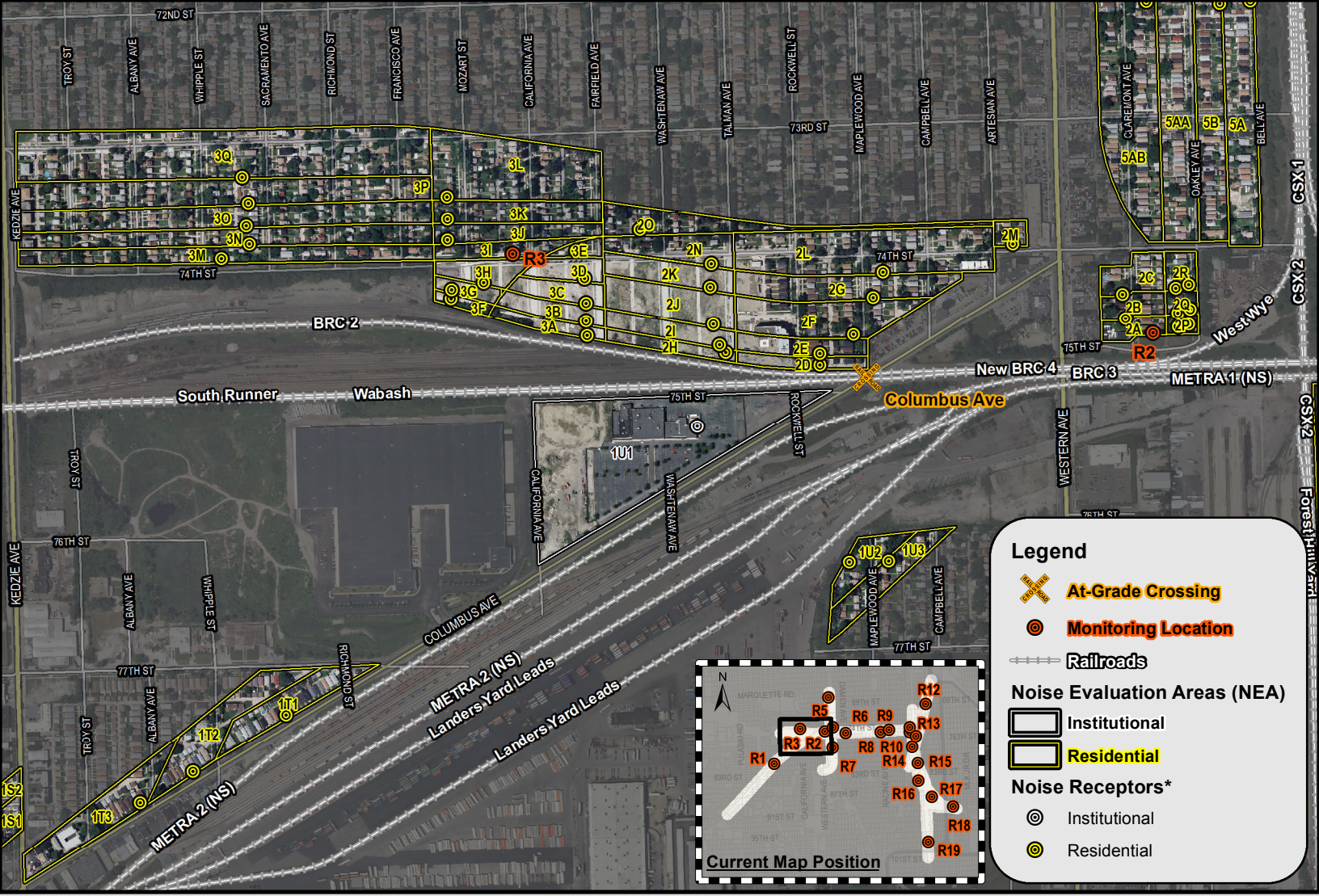
| Receptor | Existing | | | | No Build | | | | Build | | | | Increase of Lmax between Build and Existing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $L_{max}$ Locos | $L_{max}$ Railcars | $L_{max}$ Horn | $L_{max}$ Train | $L_{max}$ Locos | $L_{max}$ Railcars | $L_{max}$ Horn | $L_{max}$ Train | $L_{max}$ Locos | $L_{max}$ Railcars | $L_{max}$ Horn | $L_{max}$ Train | |
| **19AS** | 89 | 93 | 106 | 106 | 89 | 93 | 106 | 106 | 89 | 93 | 106 | 106 | 0 |
| **19AX** | 87 | 91 | 104 | 104 | 87 | 91 | 104 | 104 | 87 | 91 | 104 | 104 | 0 |
| **19BA** | 88 | 92 | 105 | 105 | 88 | 92 | 105 | 105 | 88 | 92 | 105 | 105 | 0 |
| **19D** | 88 | 92 | 106 | 106 | 89 | 93 | 106 | 106 | 89 | 93 | 106 | 106 | 0 |
| **19F** | 88 | 91 | 104 | 104 | 88 | 91 | 104 | 104 | 88 | 91 | 104 | 104 | 0 |
| **19H** | 90 | 94 | 107 | 107 | 89 | 94 | 107 | 107 | 90 | 94 | 107 | 107 | 0 |
| **19I** | 86 | 90 | 103 | 103 | 86 | 90 | 103 | 103 | 86 | 89 | 103 | 103 | 0 |
| **19K** | 87 | 91 | 104 | 104 | 87 | 91 | 104 | 104 | 87 | 91 | 104 | 104 | 0 |
| **19M** | 89 | 95 | 108 | 108 | 90 | 95 | 108 | 108 | 90 | 95 | 108 | 108 | 0 |
| **19N** | 87 | 90 | 103 | 103 | 87 | 90 | 103 | 103 | 87 | 90 | 103 | 103 | 0 |
| **19Q** | 88 | 92 | 105 | 105 | 88 | 92 | 104 | 104 | 89 | 92 | 105 | 105 | 0 |
| **19R** | 90 | 94 | 107 | 107 | 90 | 94 | 107 | 107 | 90 | 94 | 107 | 107 | 0 |
| **19U** | 90 | 96 | 107 | 107 | 90 | 96 | 107 | 107 | 90 | 96 | 107 | 107 | 0 |
| **19X** | 88 | 92 | 105 | 105 | 89 | 93 | 106 | 106 | 89 | 93 | 106 | 106 | 1 |
| **19Y** | 87 | 90 | 103 | 103 | 86 | 90 | 103 | 103 | 87 | 90 | 103 | 103 | 0 |
| **19Z** | 88 | 91 | 104 | 104 | 87 | 91 | 104 | 104 | 88 | 91 | 104 | 104 | 0 |
| ***Minimum*** | *79* | *75* | *0* | ***82*** | *79* | *75* | *0* | ***82*** | *78* | *75* | *0* | ***82*** | ***-2*** |
| ***Maximum*** | *91* | *96* | *109* | ***109*** | *90* | *96* | *109* | ***109*** | *90* | *96* | *109* | ***109*** | ***5*** |


Scale 0 500 1000 Feet

*Noise clusters with multiple noise receptors aggregate rail noise sources from multiple directions.

**Figure 1 - NEA 1 Receptor and Cluster Map**
**75th Street CIP EIS - Appendix E**

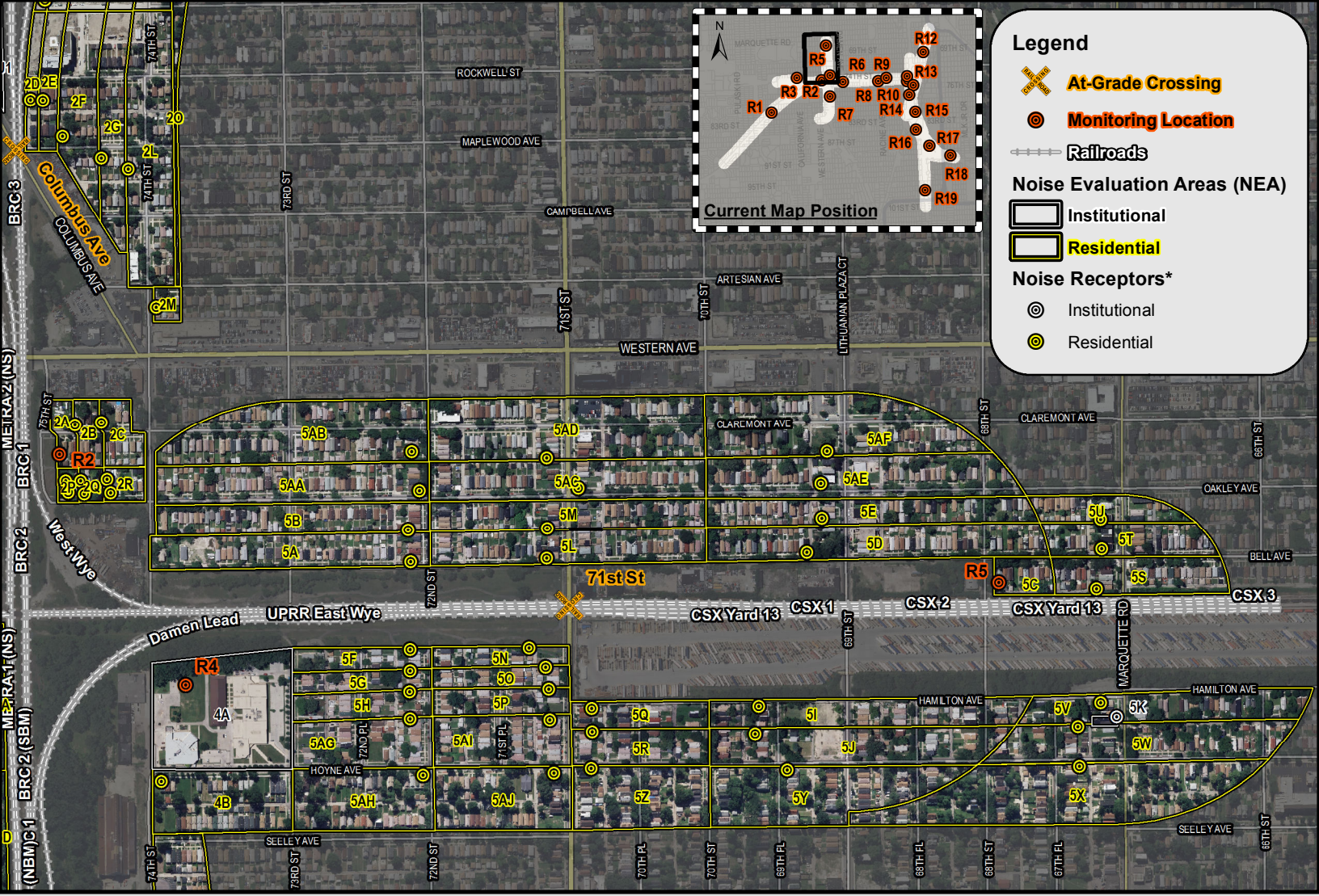

**Figure 2 - NEA 1 (continued) Receptor and Cluster Map**
**75th Street CIP EIS - Appendix E**




Scale 0 500 1000 Feet

*Noise clusters with multiple noise receptors aggregate rail noise sources from multiple directions.

**Figure 3 - NEA 1, 2, and 3 Receptor and Cluster Map**
**75th Street CIP EIS - Appendix E**




Scale 0 500 1000 Feet

*Noise clusters with multiple noise receptors aggregate rail noise sources from multiple directions.

**Figure 4 - NEA 4 and 5 Receptor and Cluster Map**
**75th Street CIP EIS - Appendix E**

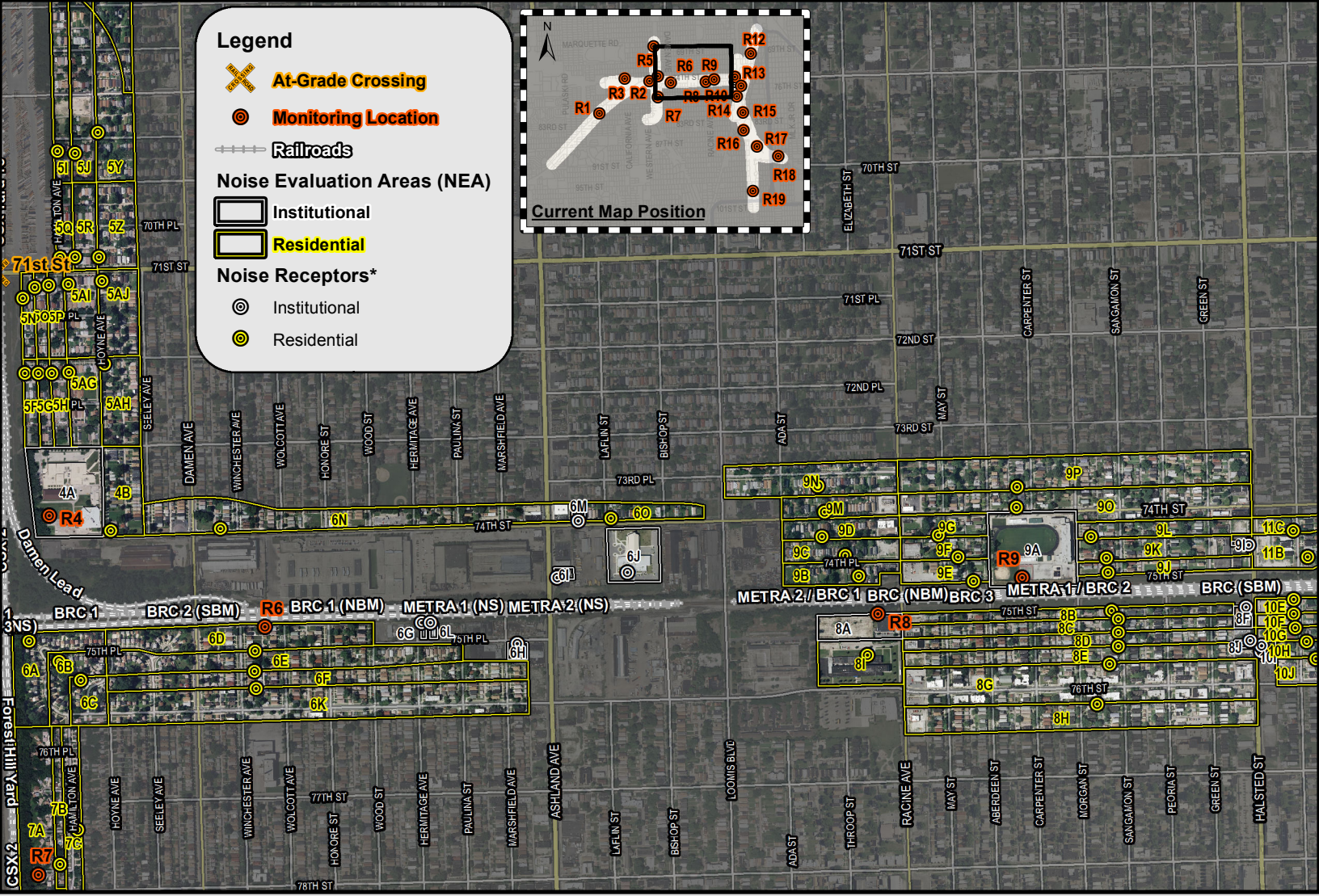
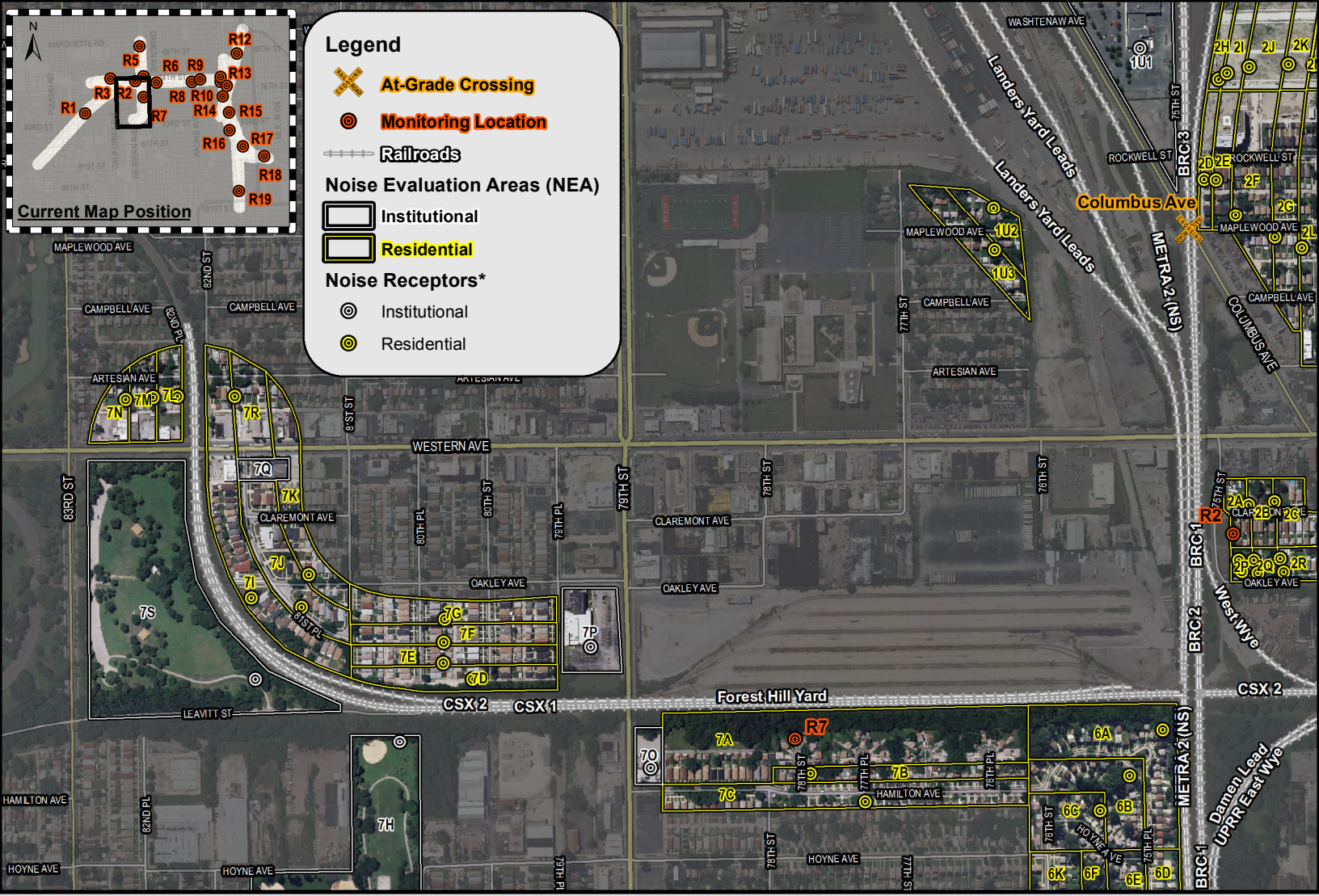



**Figure 5 - NEA 6, 8, and 9 Receptor and Cluster Map**
**75th Street CIP EIS - Appendix E**




Scale 0 500 1000 Feet

*Noise clusters with multiple noise receptors aggregate rail noise sources from multiple directions.

**Figure 6 - NEA 7 Receptor and Cluster Map**
**75th Street CIP EIS - Appendix E**

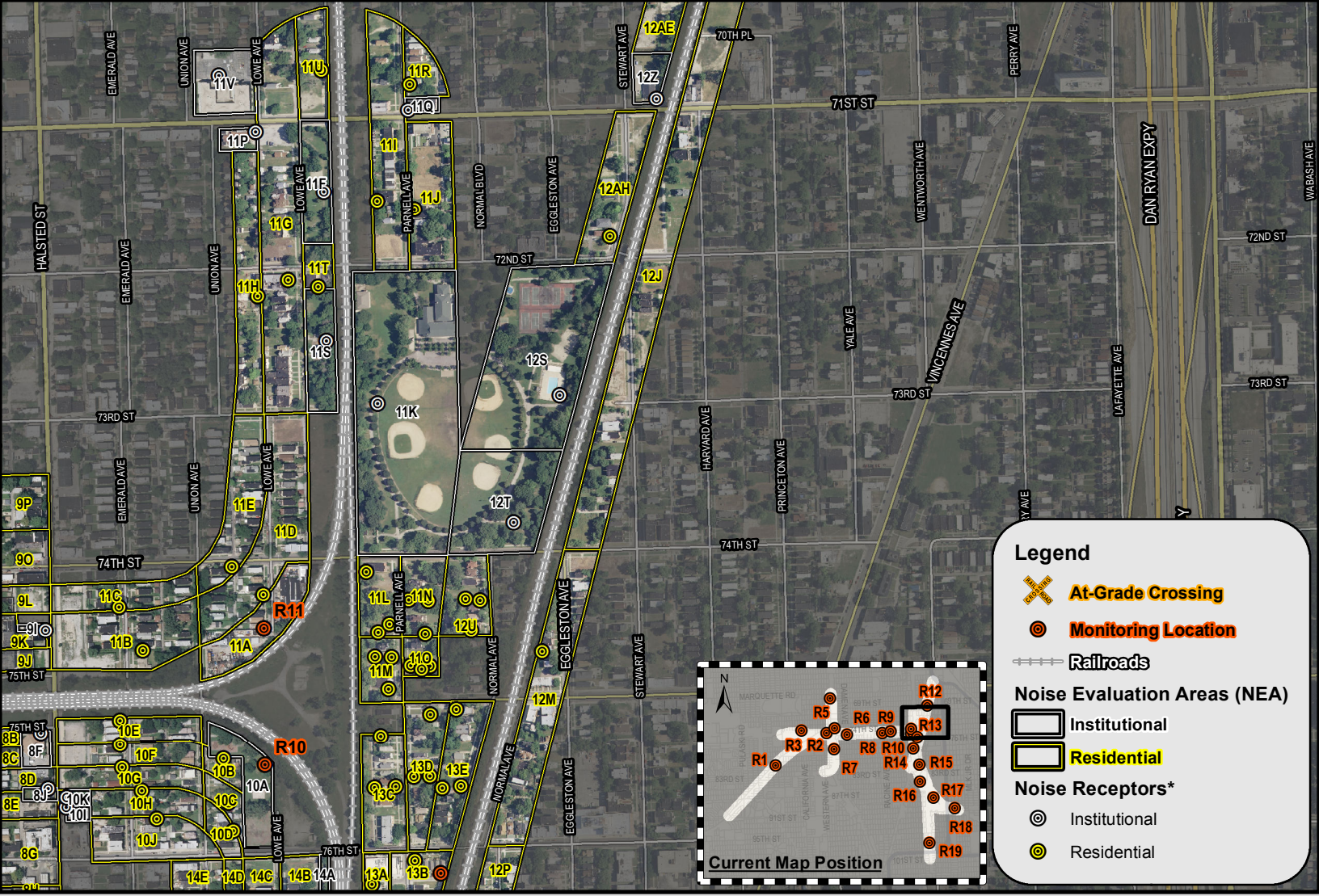



**Figure 7 - NEA 10, 11, 12, and 13 Receptor and Cluster Map**
**75th Street CIP EIS - Appendix E**

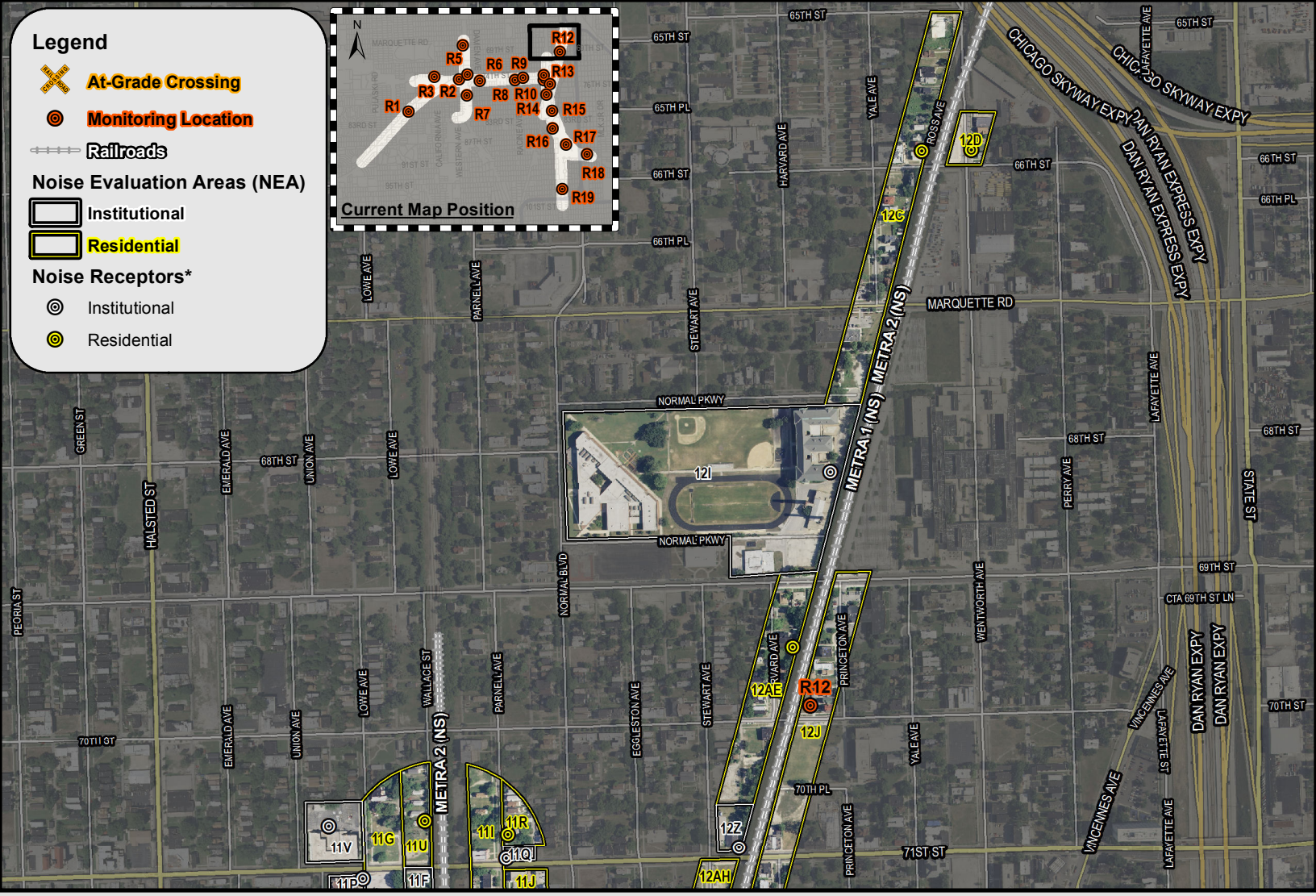
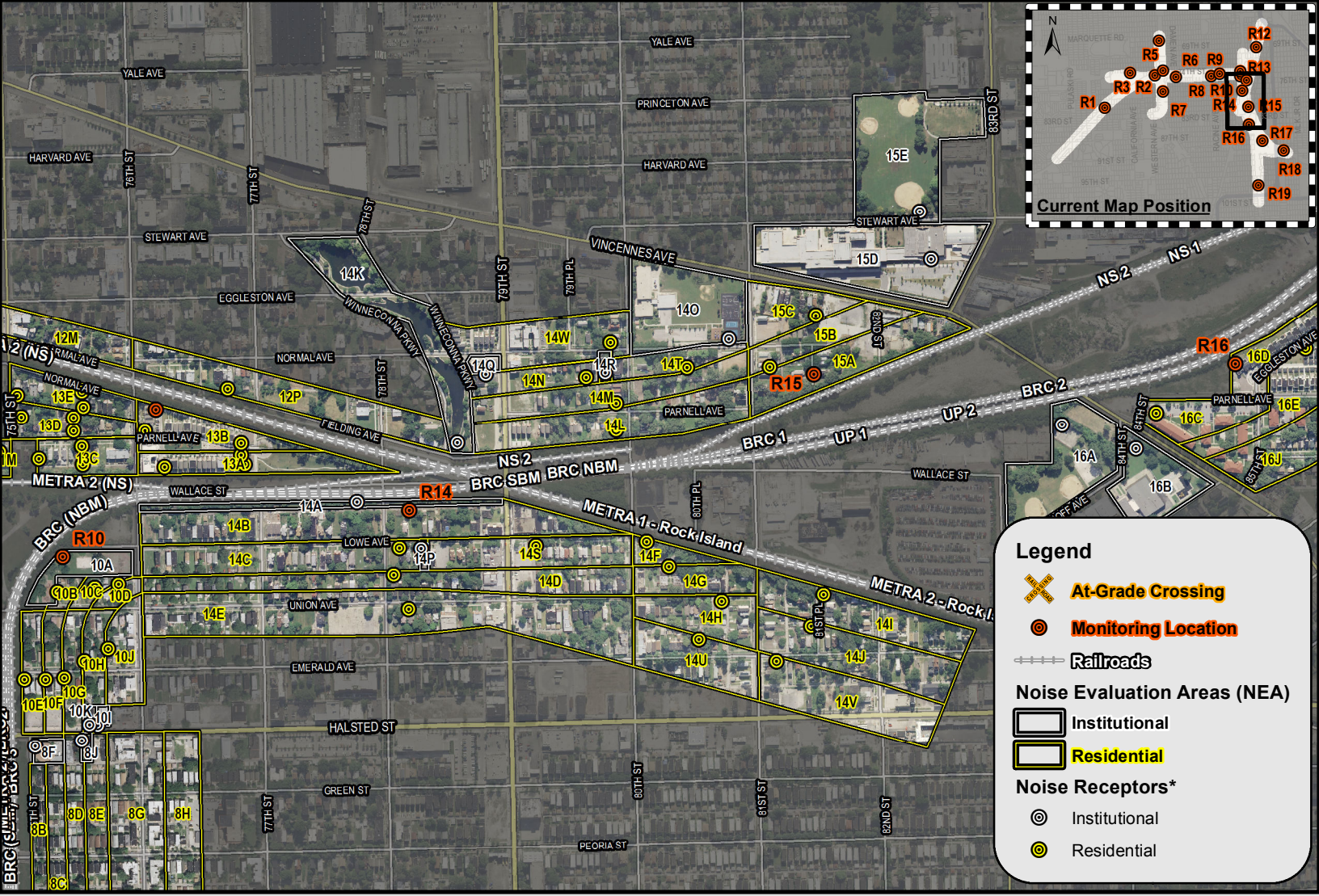



**Figure 8 - NEA 12 Receptor and Cluster Map**
**75th Street CIP EIS - Appendix E**




Scale 0 500 1000 Feet

*Noise clusters with multiple noise receptors aggregate rail noise sources from multiple directions.

**Figure 9 - NEA 13, 14, and 15 Receptor and Cluster Map**
**75th Street CIP EIS - Appendix E**


Scale 0 500 1000 Feet

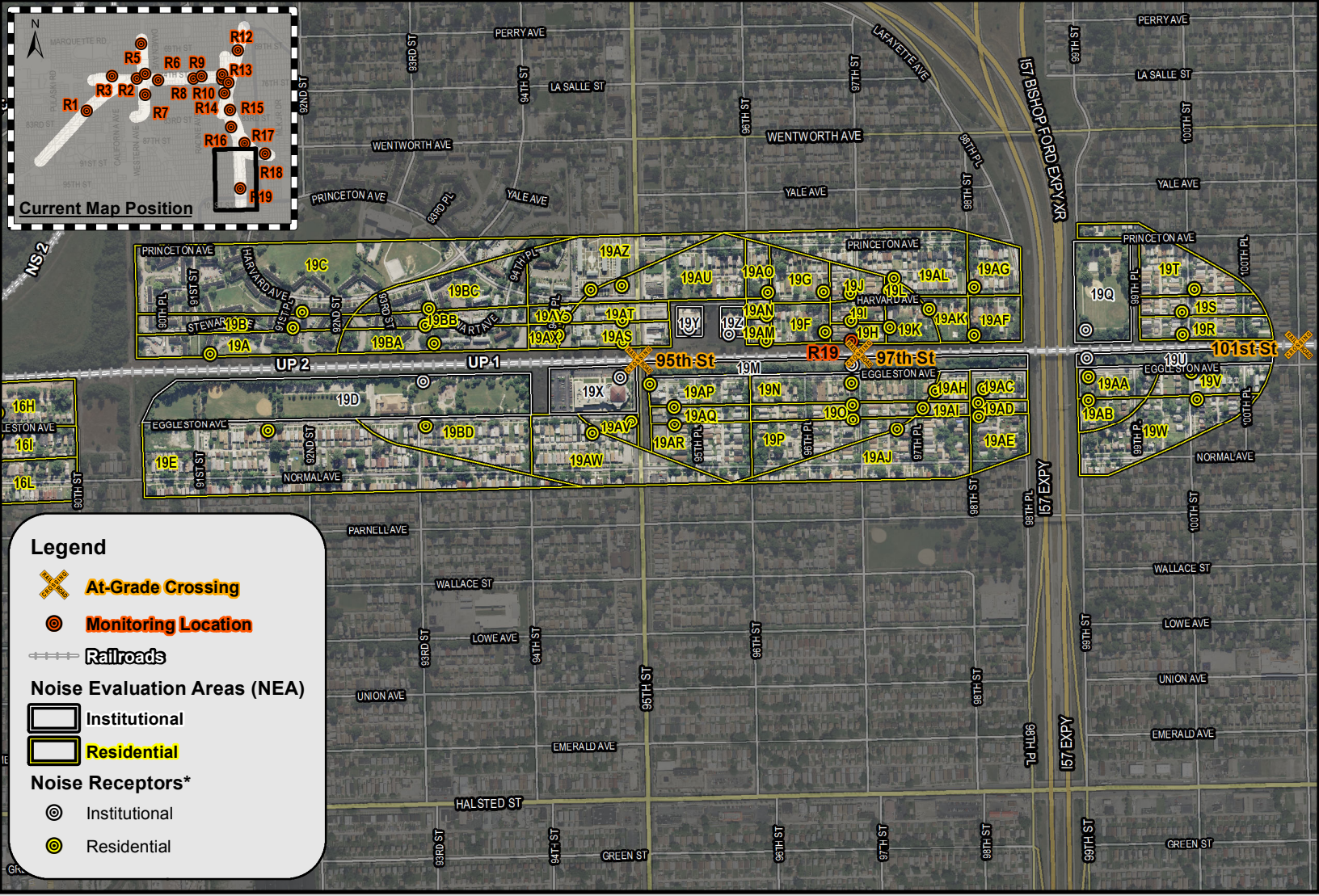
*Noise clusters with multiple noise receptors aggregate rail noise sources from multiple directions.

**Figure 10 - NEA 16 and 17 Receptor and Cluster Map**
**75th Street CIP EIS - Appendix E**


Scale 0 500 1000 Feet

*Noise clusters with multiple noise receptors aggregate rail noise sources from multiple directions.

**Figure 11 - NEA 18 Receptor and Cluster Map**
**75th Street CIP EIS - Appendix E**




Scale 0 500 1000 Feet

*Noise clusters with multiple noise receptors aggregate rail noise sources from multiple directions.

**Figure 12 - NEA 19 Receptor and Cluster Map**
**75th Street CIP EIS - Appendix E**

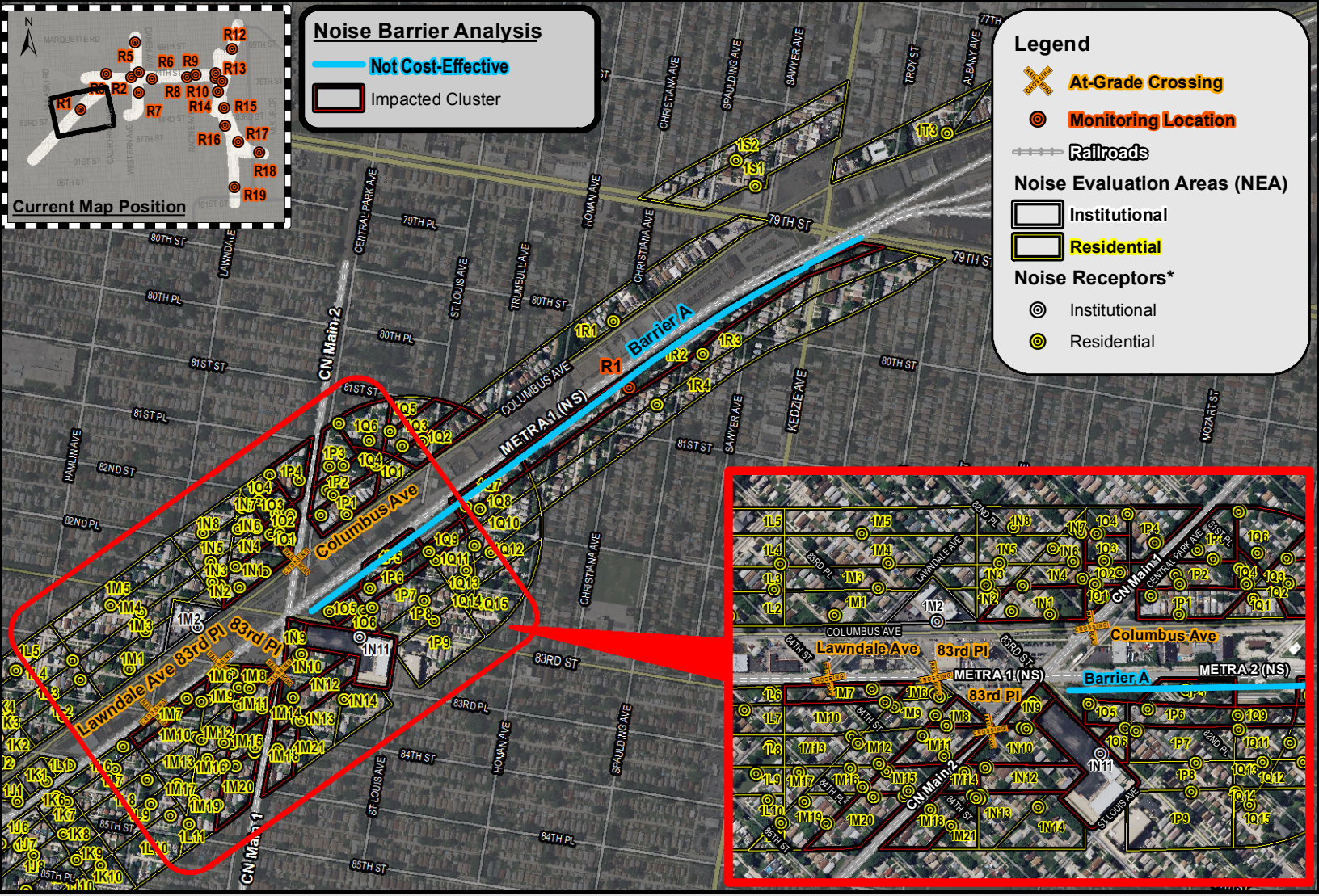
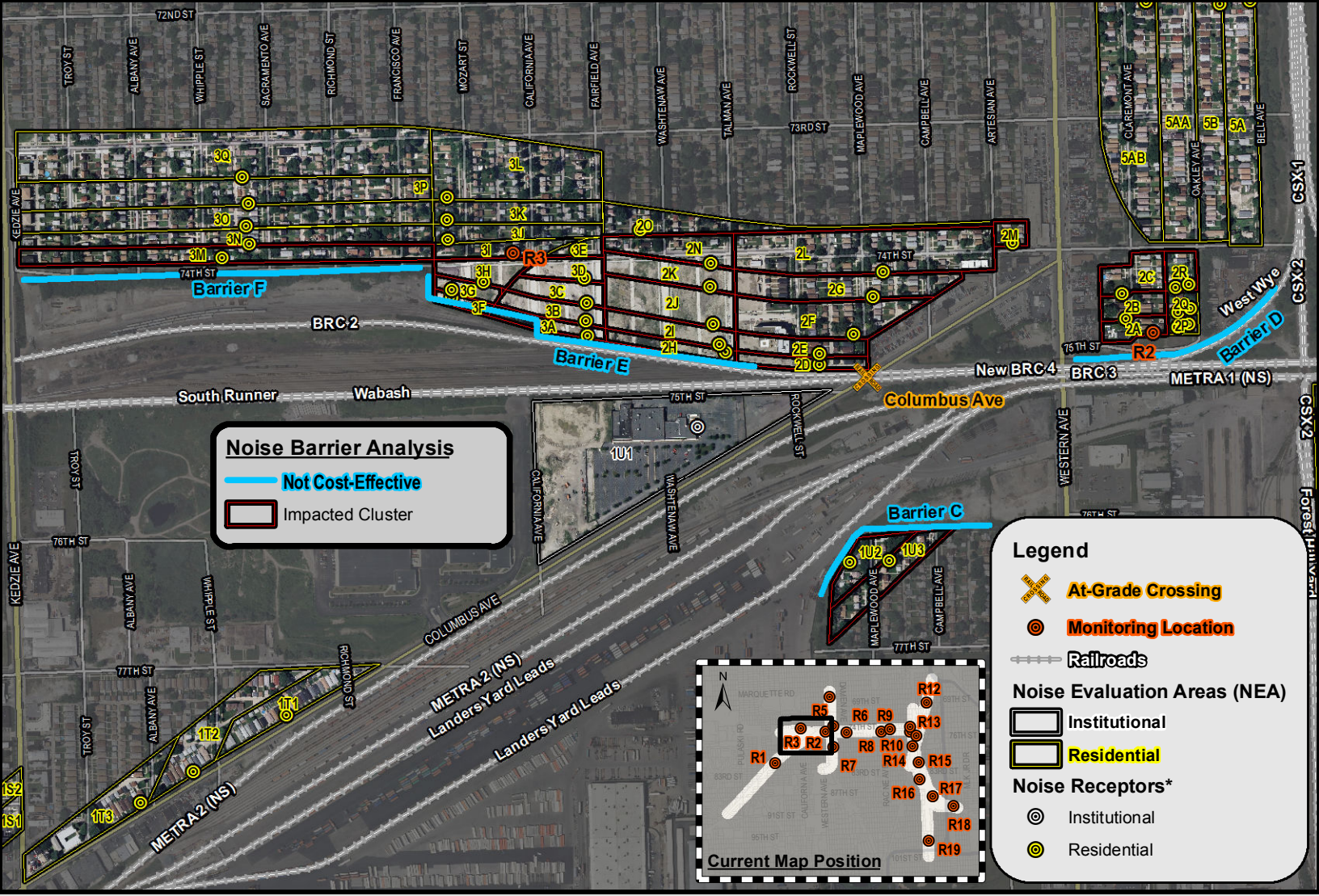



**Figure 13 - Abatement Evaluation - NEA 1**
**75th Street CIP EIS - Appendix E**




Scale 0 500 1000 Feet

*Noise clusters with multiple noise receptors aggregate rail noise sources from multiple directions.

**Figure 14 - Abatement Evaluation - NEA 2 and 3**
**75th Street CIP EIS - Appendix E**

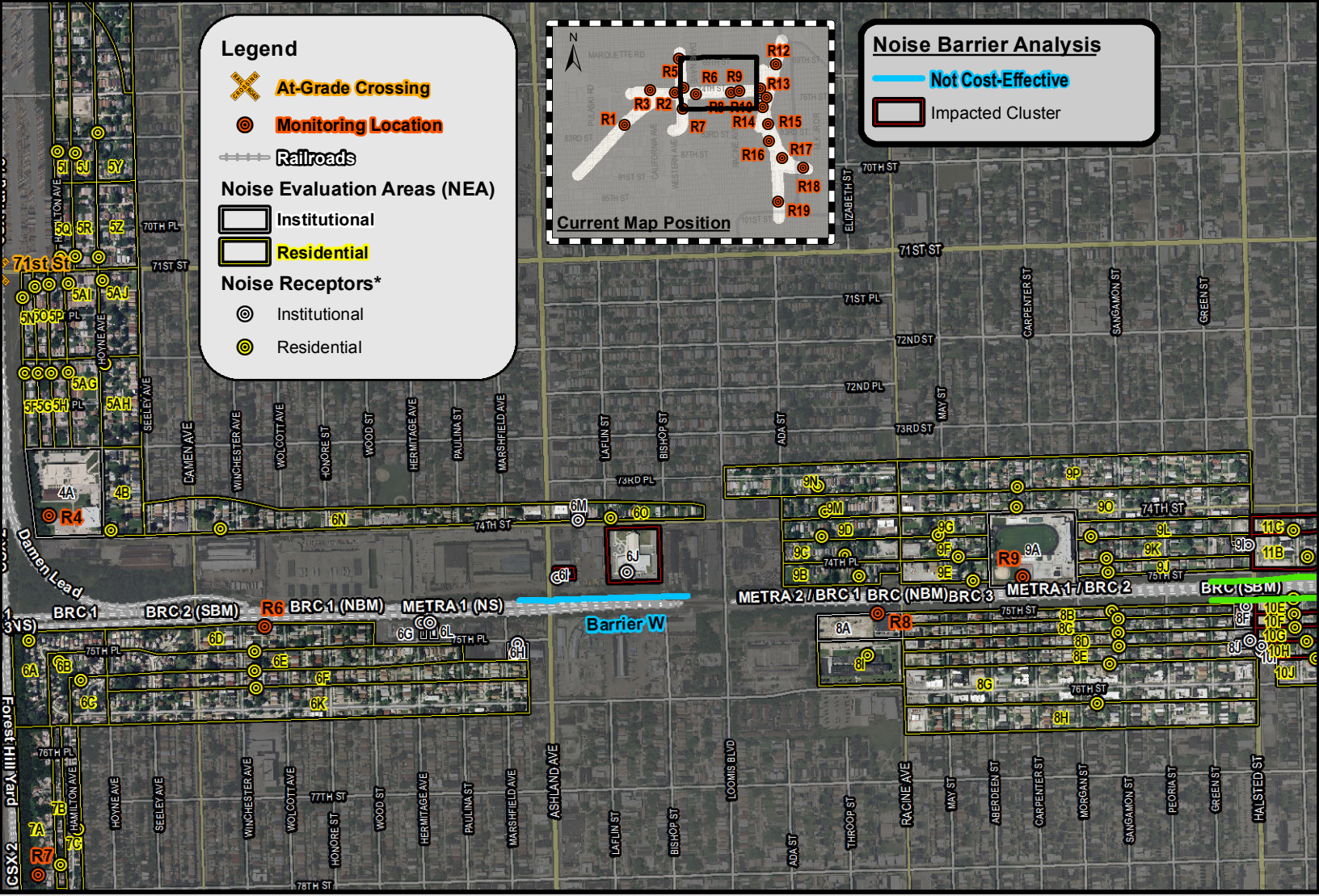
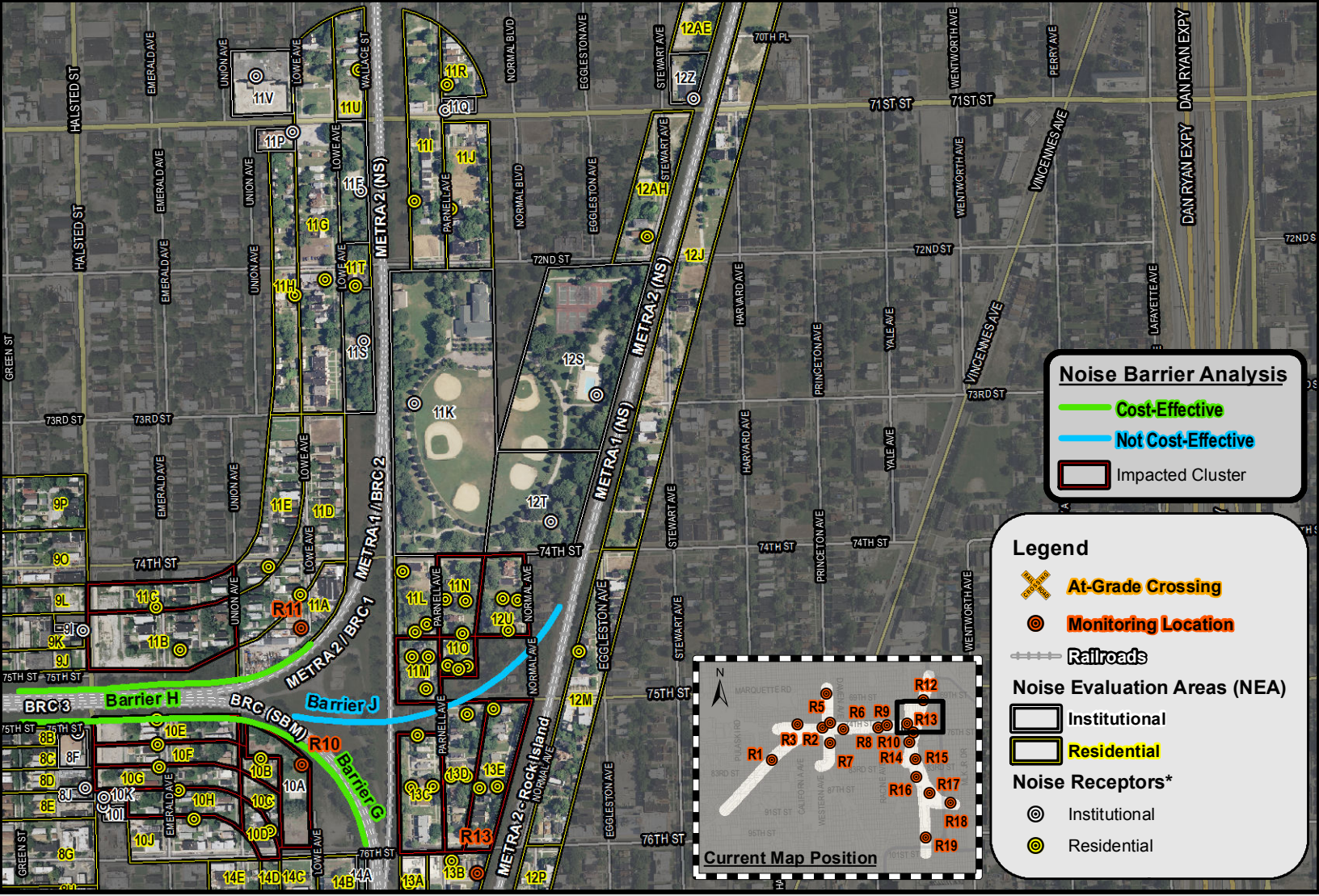



**Figure 15 - Abatement Evaluation - NEA 6**
**75th Street CIP EIS - Appendix E**




Scale 0 500 1000 Feet

*Noise clusters with multiple noise receptors aggregate rail noise sources from multiple directions.

**Figure 16 - Abatement Evaluation - NEA 10, 11, 12, 13**
**75th Street CIP EIS - Appendix E**

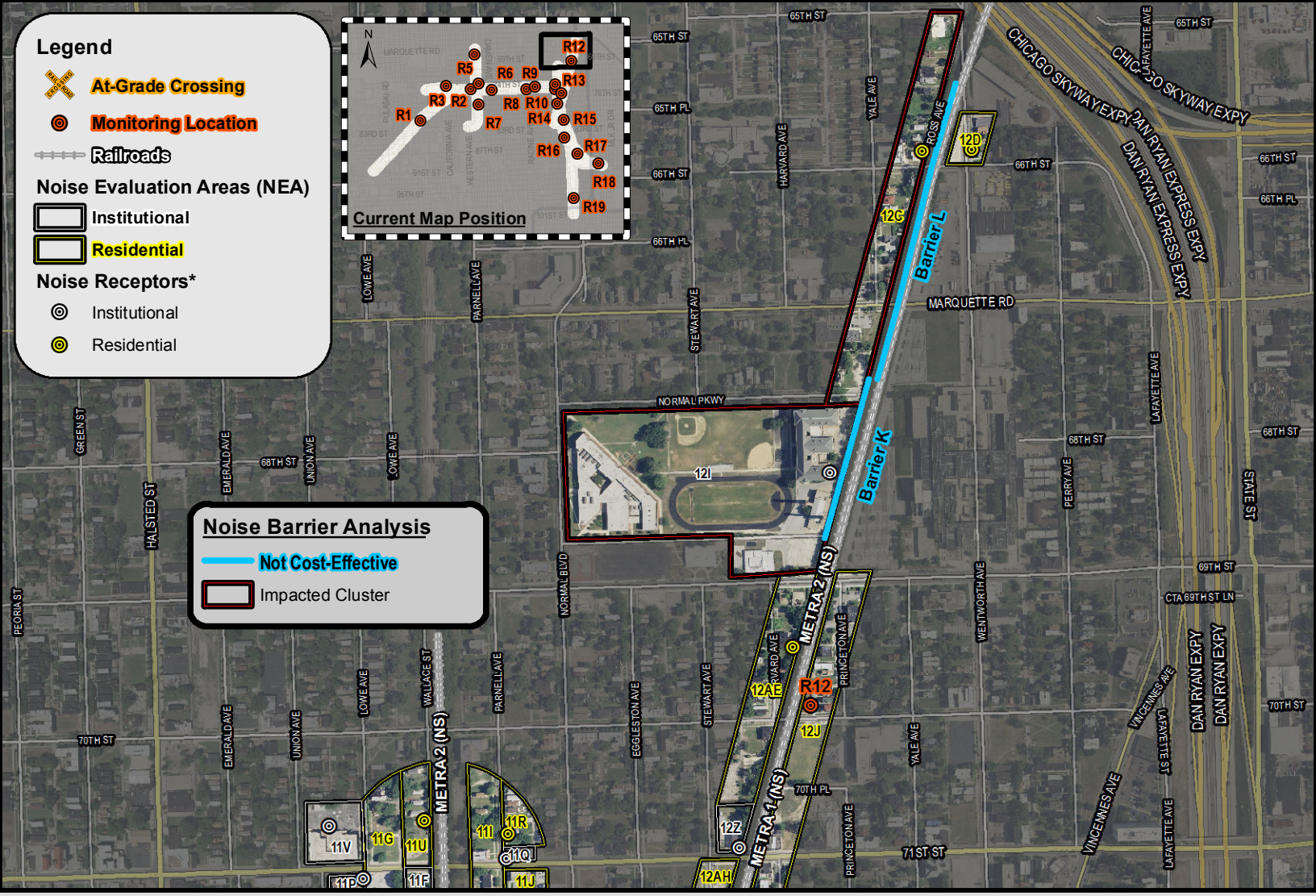
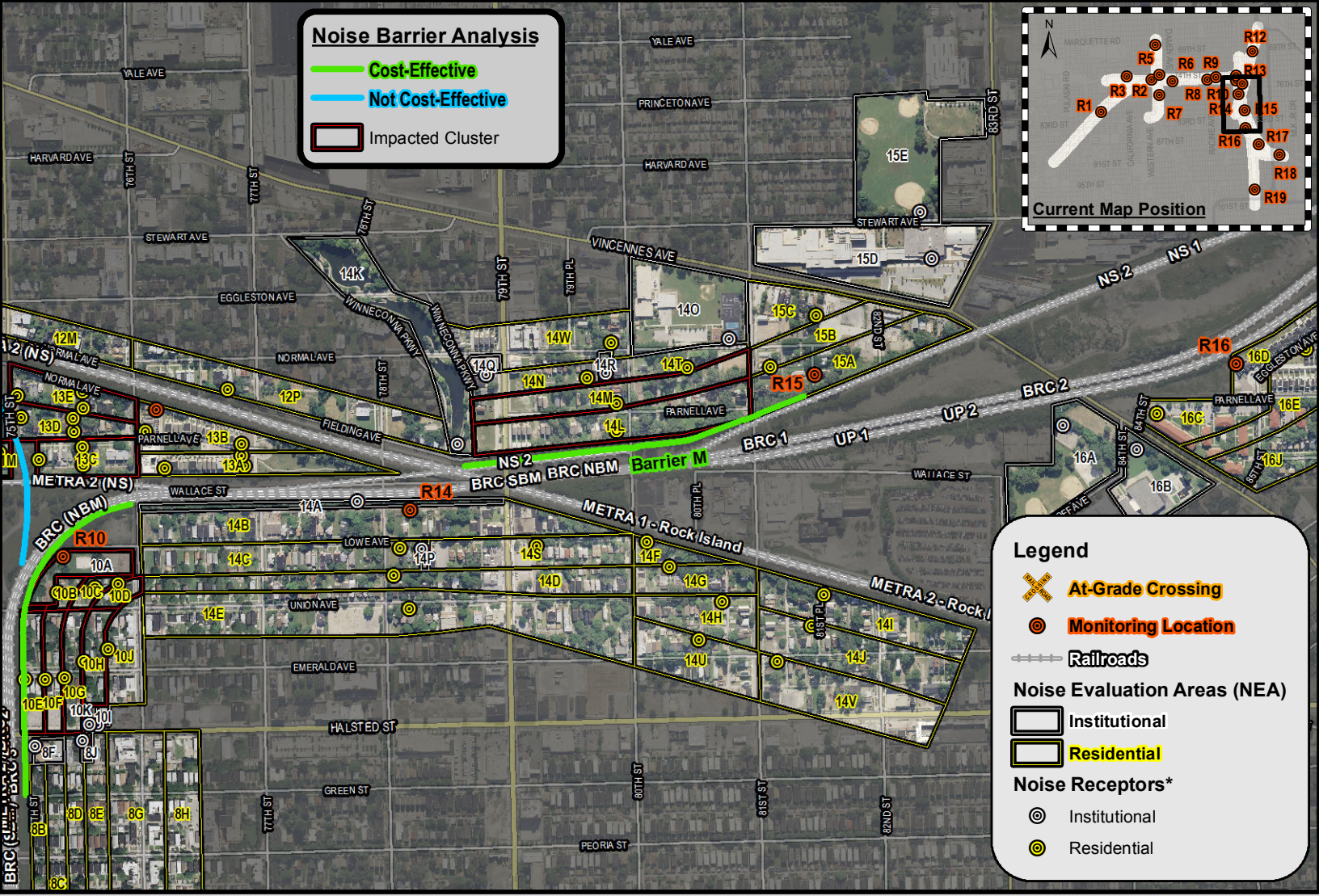


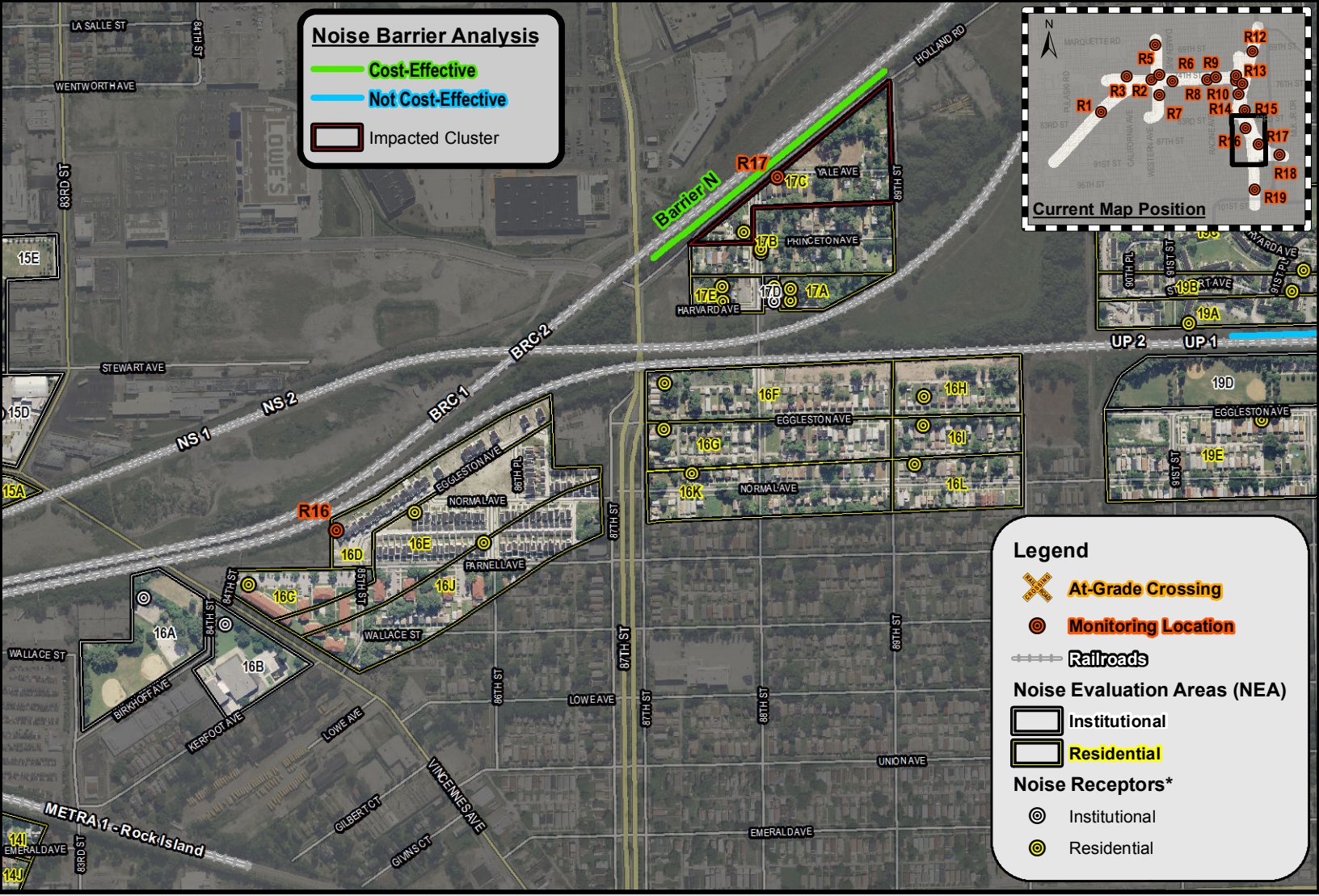

**Figure 17 - Abatement Evaluation - NEA 12**
**75th Street CIP EIS - Appendix E**




Scale 0 500 1000 Feet

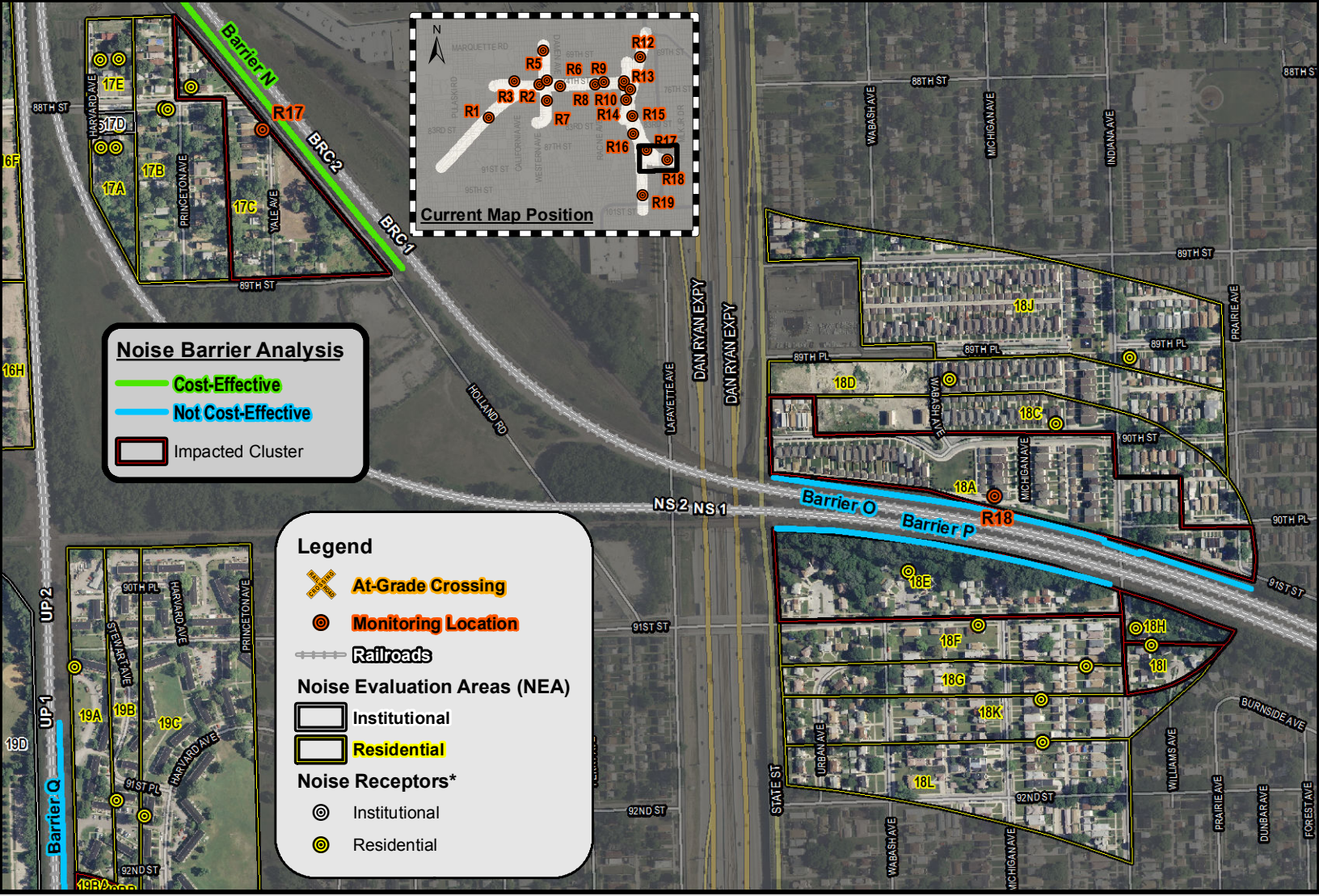
*Noise clusters with multiple noise receptors aggregate rail noise sources from multiple directions.

**Figure 18 - Abatement Evaluation - NEA 14**
**75th Street CIP EIS - Appendix E**




*Noise clusters with multiple noise receptors aggregate rail noise sources from multiple directions.

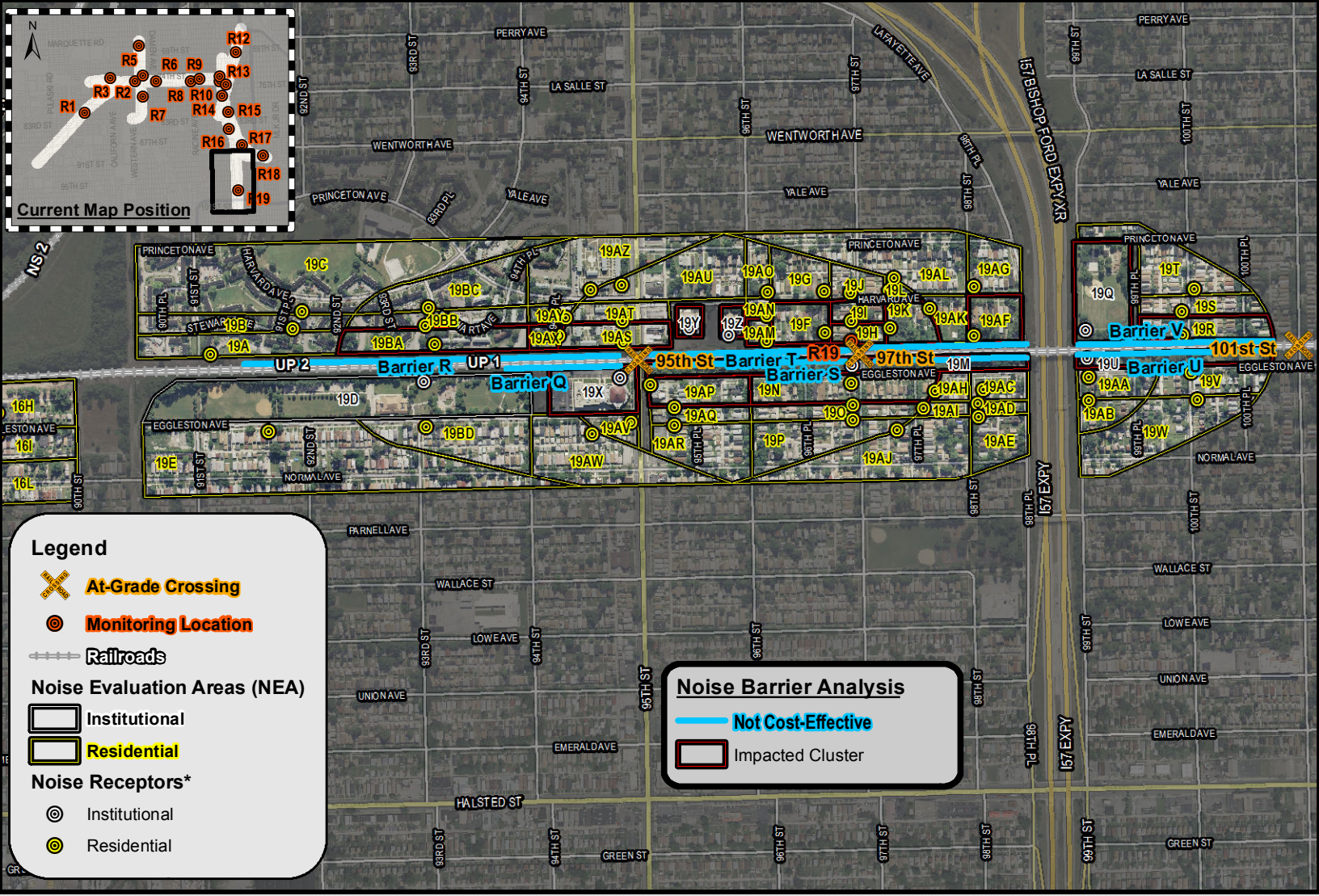
**Figure 19 - Abatement Evaluation - NEA 17**
**75th Street CIP EIS - Appendix E**




Scale 0 500 1000 Feet

*Noise clusters with multiple noise receptors aggregate rail noise sources from multiple directions.

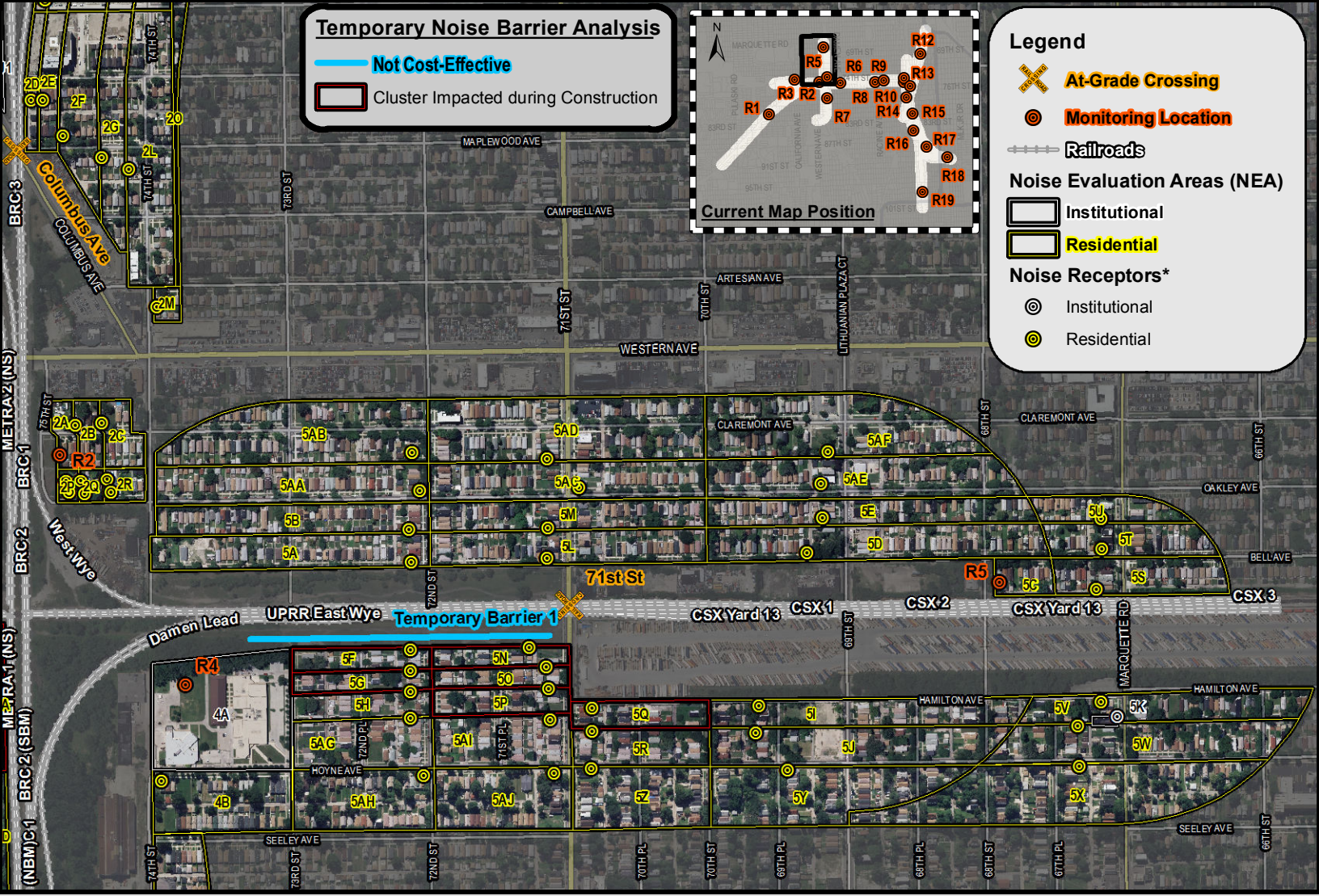
**Figure 20 - Abatement Evaluation - NEA 18**
**75th Street CIP EIS - Appendix E**




Scale 0 500 1000 Feet

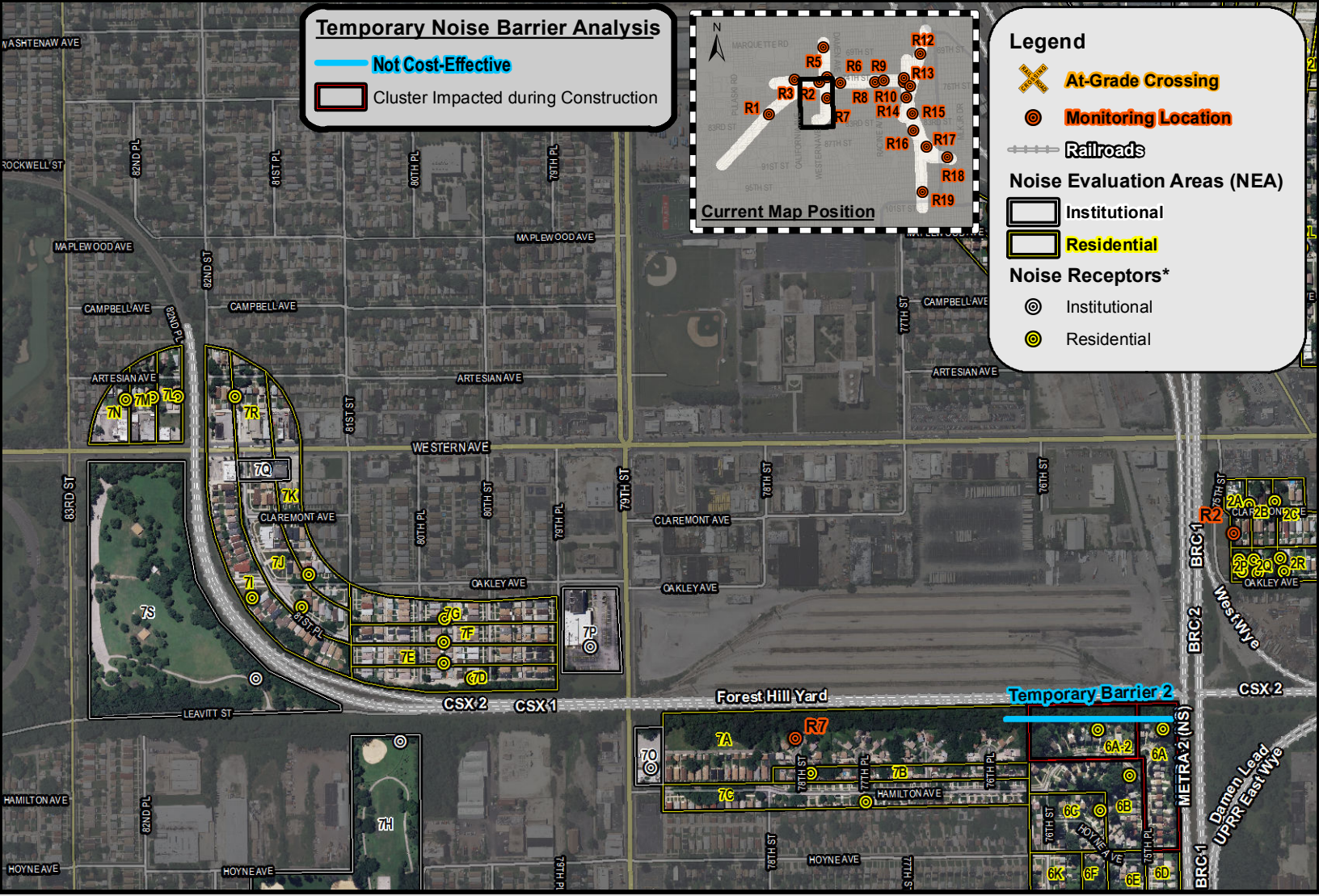
*Noise clusters with multiple noise receptors aggregate rail noise sources from multiple directions.

**Figure 21 - Abatement Evaluation - NEA 19**
**75th Street CIP EIS - Appendix E**




*Noise clusters with multiple noise receptors aggregate rail noise sources from multiple directions.

**Figure 22 - Construction Abatement Evaluation - NEA 5**
**75th Street CIP EIS - Appendix E**




Scale 0 500 1000 Feet

*Noise clusters with multiple noise receptors aggregate rail noise sources from multiple directions.

**Figure 23 - Construction Abatement Evaluation - NEA 6**
**75th Street CIP EIS - Appendix E**